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The Air Force Critical Care Air Transport Team (CCATT):
Using the Estimating Supplies Program (ESP) to Validate Clinical Requirements



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Summary

Problem

The Air Force Medical Support Agency/Surgeon General Support Logistics Office requested that the Naval Health Research Center (NHRC) conduct a proof of concept study to assess the validity and feasibility of using a medical modeling tool developed by NHRC in US Air Force (USAF) Allowance Standard (AS) development and management. The Critical Care Air Transport Team (CCATT) Unit Type Code (UTC) AS was the second Air Force UTC selected in this study to develop an inventory validation process using the databases in the NHRC Modeling and Simulation laboratory.

Objective

The primary objective of this study was to provide the Air Force with the ability to validate the clinical requirements of the CCATT assemblage, using the Estimating Supplies Program (ESP) to establish a viable audit trail linking clinical requirements with supply and equipment items.

Approach

The approach was to use the reliable system NHRC has in place that employs the underlying relational database in ESP to correlate task profiles and supplies to patient conditions (PCs) addressed in the CCATT concept of operations.

The CCATT supply and equipment inventory was mapped to clinical tasks and PCs in ESP. Assignment of supplies and equipment to clinical tasks was undertaken with guidance and input from CCATT clinical subject matter experts (SMEs), a panel having operational experience with CCATT deployment. Their expertise on likely PCs the CCATT might encounter and the proscribed clinical standards of care to be provided ensured that the patient stream entered into ESP represented an accurate depiction of clinical tasks that might occur, and that a full array of tasks was captured and validated in the model. To develop a comprehensive patient stream, the NHRC team aggregated 111 PCs into 12 patient categories, developed clinical task profiles for the categories, and generated the materiel lists necessary to support the clinical tasks.

Results

The CCATT system has a wide array of supplies and equipment linked to clinical tasks enabling the management of the critically ill or injured en route to the appropriate level of care (LOC) or medical treatment facility (MTF). As a result of this baseline review of that inventory, all possible items were

mapped to a clinical requirement, ensuring that they serve a clinical purpose. For optimal efficiency, inventory amounts were based on per-patient need for specific supply and equipment items.

The entire CCATT inventory was mapped to clinical tasks. Items for placing patients in respiratory isolation and the HIV medication available to providers for incidental needle sticks were *not* included in the model.

Noteworthy for a highly mobile UTC is that this effort, which included eliminating heavy, low-volume items, resulted in a 8.25% decrease of almost 40 pounds in overall weight. Conversely, there was a 43% increase in the cube, and a 6% cost increase, due largely to adding supplies and equipment required for intracranial pressure monitoring and draining, items which are both high cost and high volume.

Discussion and Conclusion

The range of PCs the CCATT supports is comprehensive. The clinical SMEs concurred that the list of 111 PCs represented the CCATT mission well, and supported clustering them and aggregating them down into 12 patient categories. Many clinical tasks for the 111 PCs are supported by the core of materiel associated with tasks mapped to those 12 categories.

Using a patient stream that reflected the CCATT mission, its concept of employment, and likely PCs treated there, ESP generated an appropriate supply and equipment list based on encountering each of the 12 patient categories once. Aggregating the PCs across 12 patient categories, representing all 111 PCs, was valuable in that it ensured that all tasks were called for in the model, even tasks assigned to a PC with a low probability of occurrence. Doing so further demonstrated common clinical tasks across an array of PCs. Unit of measure, unit of issue, weight, cost, and cube data were then compared with those in the current CCATT AS inventory.

A secondary result of this effort was the development of a process that includes using SMEs to link PCs, tasks, and supplies unique to a particular mission, in this case, the CCATT one. This process produces an audit trail to clinical tasks and can be applied to existing inventories from other UTCs and services, all of which can be validated using ESP.

Introduction

Background

Despite the increased lethality of modern day weaponry, there has been a marked increase in survivability in the critically injured, due in large part to the CCATT's ability to move patients rapidly to the appropriate LOC.

Today's battle space is more fluid than ever before. Service personnel are critically injured in areas far removed from fixed MTFs, calling for increased reliance on rapidly mobile health care delivery systems. This approach is pursuant to the Joint Chiefs of Staff *Joint Vision 2010* concept of increased mobility, dispersion, and pursuit of a higher tempo of operations among elements within the battle space.¹ The results of using mobile health care facilities were evident when a critically wounded soldier in Iraq was treated with staged surgical intervention and fluid resuscitation for damage control, managed en route, and transported for definitive care to Walter Reed Army Medical Center within 36 hours of injury.²

Configuring materiel requirements for these and other medical missions is integral to the success of forward casualty management and treatment. Researchers at NHRC determined supply and equipment needs for mobile MTFs and have developed an extensive database relating PCs, clinical tasks, supplies, and equipment. This database is the foundation for ESP, NHRC's medical modeling tool, and was used to develop the Marine Corps Forward Resuscitative Surgical System (FRSS)³ and En Route Care System.⁴ ESP has also been used for inventory validation for a broad range of operational medical systems supporting both Marine Corps ground combat elements and Navy afloat platforms. It was recently used to develop the Navy's Shipboard Surgical System⁵ and to validate the Air Force's Mobile Forward Surgical Team (MFST)⁶ inventory. Validation of the CCATT system was possible using ESP's capabilities.

The Air Force Medical Support Agency/Surgeon General Support Logistics Office requested that NHRC conduct a proof of concept study to assess the validity and feasibility of integrating the use of ESP in USAF AS development and management. The CCATT was one system selected to develop audit trails using ESP's underlying relational database structure, shown in Figure 1. In the Figure, PC 005, a cerebral contusion, is correlated to tasks and then to those supplies needed to carry them out. Knowing which PCs the CCATT treats would lead to tasks the team performs, which would

ultimately provide the framework for a workable, optimized inventory of medical supplies and equipment.

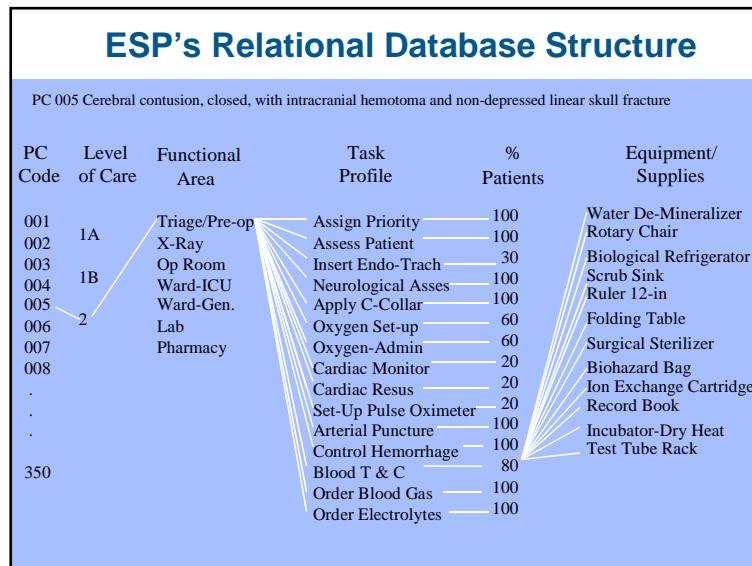


Figure 1. ESP's Relational Database Structure for PC 005

Critical Care Aeromedical Transport Mission Statement and Concept of Operations

When developing the materiel requirements list, the capability review study takes into account mission capability requirements, types of patients encountered, duration of care, operational environment, and the clinical background of the CCATT team.

The CCATT is capable of providing stabilization or advanced critical care of critically ill, injured, or burned patients during either intra- or inter-theater air transport to the next LOC.⁷ Each 3-member team consists of an intensivist physician, a critical care nurse, and a cardiopulmonary technician. Their patients are usually in a state of dynamic, physiological flux. Injuries or conditions requiring CCATT support include supportive or resuscitative care of shock/hemorrhage, respiratory failure, and multi-system trauma.

CCAT team intervention normally begins at the air evacuation staging location. Once a stabilized patient arrives, the CCAT team prepares them for transport, accompanies them to the aircraft, and continues to monitor the patient and provide intervention care in-flight, as necessary.

The maximum patient load is 3 high-acuity patients or 6 relatively low-acuity, stabilized patients, during a realistic duty day of about 16 hours. A high-acuity patient may be one who has suffered significant multiple organ injuries, has not received definitive surgical care but has had life- or limb-saving procedures performed and requires movement to the next LOC. This patient will likely present a significant challenge to the CCATT staff and may require substantially more supplies and equipment than a low-acuity patient. However, this same patient may become a lower acuity patient once more definitive procedures have been performed at a higher LOC. A low-acuity patient may be one who has received multiple injuries to extremities and has had life- or limb-saving procedures performed, but whose internal organs were not injured; these patients may need monitoring, but will not make the same demands on personnel or inventory as the high-acuity ones.

The duration of a CCATT mission varies depending on location and the nature of the patient's injuries. Both long and short missions are possible. For instance, a stabilized patient received from a staging location in Southwest Asia for transport to Landstuhl may require about 6 hours of flight time, with pre- and post-flight transport and management extending that mission by 2 hours or longer. A patient leaving Landstuhl en route to Walter Reed Army Medical Center for more definitive care will require patient packaging and ground transportation, as well as 8-10 hours of flight time.

The CCAT team does *not* routinely provide primary stabilization and does *not* replace forward surgical or medical team capabilities.

Methodology

The NHRC model involves a process that begins with identifying which PCs and how many of each will be encountered in a given UTC, utilizing casualty projection programs that have been incorporated into ESP. The ESP relational database captures illness and injury data, and is composed of PC codes, tasks, supplies, and medical configurations that it uses to simulate mission scenarios. ESP generates a patient stream, associated PCs, and the tasks needed to care for those conditions, then links tasks to those supplies required to perform them. This methodology has been successfully used to develop and validate medical supply requirements at various LOCs, including the Marine Corps FRSS and the Air Force MFST.

The ESP simulation also creates an audit trail linking medical materiel inventories to clinical requirements in the armed services' medical systems. This mapping enables logisticians, medical planners and Manpower and Equipment Force Package (MEFPAK) managers to validate current

medical system configurations and to assess/validate impact on clinical capability resulting from proposed configuration changes that come from field recommendations or modernization. It also serves as a leading consumption indicator, making it easier to identify resupply requirements to ensure sustainment of the system when deployed.

The keystone of the process is ESP, the relational database that links clinical tasks and medical materiel for a specific functional area, such as the CCATT. Once CCATT tasks and materiel lists are established in the database, these data are integrated with the patient stream to develop the recommended medical materiel list (computed at the unit of measure versus unit of issue). The database structure developed for the PCs treated by the CCATT become part of the inventory review process, enabling the user to define the clinical capability of the medical system based on the inventory configuration. As technology, prescribed standards of care, and capability requirements of the medical system change, recommended inventory revisions can be vetted and validated against the model, thereby basing all components on clinical requirements that fall within a given medical system's mission scope. This systematic process ensures, for example, that "mission creep"—such as introducing level 3 clinical capabilities when the mission scope is level 1 or 2—does not occur.

Identifying Patient Conditions and Task Profiles

An SME working group was assembled to offer advice and validate both patient stream and clinical tasks based on their clinical and operational experience. The SME working group included clinicians, medical planners, and logisticians from the CCATT Pilot Unit and MEFPAK. Clinical SMEs included an anesthesiologist, several critical care nurses, and respiratory technologists. A list of participants and contact information is provided in Appendix A. Input from the group, which convened three times over the course of the project, was critical for ensuring appropriate alignment of medical materiel to clinical tasks. The panel validated the clinical tasks and PCs that the CCATT must support, and made sure those tasks and PCs were within the CCATT mission capability scope.

The first meeting was a teleconference during which a project overview and goals were presented. Those clinical SMEs with operational experience provided valuable insight regarding the employment, mission, and capabilities of the CCATT system. NHRC provided, as a starting point, a list of 111 Defense Medical Standardization Board (DMSB) PCs that were determined to be of the type transported by the CCATT, as mentioned in the CCATT mission statement. Appendix B is a list of those 111 PCs.

Grouping Patient Conditions Into Patient Categories

One hundred eleven PCs were selected from the DMSB list of 313 as relevant to the CCATT mission scope. Because they covered a broad range of PCs and because the CCATT mission calls for a relatively small patient stream, the 111 were aggregated into 12 patient categories. The rationale behind this was that, rather than develop 111 individual patient task profiles, it would be more efficient to cluster PCs by similar condition or injury, and then create profiles to suit each category. Category A, for instance, Post Surgical Thoracic, includes PCs 159, 166, 167, 168, 169, all of which call for similar tasks, which in turn require similar supplies and equipment. The probability of creating a patient stream that captured all tasks associated with the 111 PCs in the model was very low, whereas using 12 comprehensive patient categories would ensure that all CCATT tasks and their associated supplies and equipment would be included in the simulation.

Table 1 delineates the 12 patient categories, each of which could be supported by the CCATT inventory. The first four categories are postsurgical cases, and represent thoracic, staged exploratory laparotomy, vascular/amputation, and craniotomy PCs for which surgical intervention has already occurred. The remaining PCs were grouped by chief complaint and vary greatly, from burns to cardiac arrest to acute abdominal injury.

Table 1. Patient Types

A – Post Surgical Thoracic	G – Crush/Blunt Injury
B – Post Surgical Staged Exploratory Lap	H – Head Injury
D – Post Surgical Craniotomy	J – Environmental Emergency
E – Burns > 20% BSA	K – Medical, Anaphylaxis/Asthma
F – Class III and IV Hemorrhagic Shock	L – Medical, Cardiac Event Medical

Many PCs fall into more than one category, depending on the extent of care provided prior to evacuation, or due to a change in patient status en route, as is evident in Table 2, a list of the 111 PCs and their assigned patient categories. Clinical judgments could, for example, place PC 5 [Cerebral Contusion Closed, with Intracranial Hematoma, with/without Nondepressed Linear Skull Fracture, Severe—Large Hematoma (Including Epidural Hematoma) with Rapidly Deteriorating Comatose Patient] in both categories H and D because the patient may not have had a cranial decompression performed prior to evacuation. Additionally, any postsurgical patient may go into hemorrhagic shock, causing numerous PCs to be categorized as both postsurgical (Categories A through D) and hemorrhagic (Category F). A complete list of categorized PCs is provided in Table 2.

Table 2. Patient Conditions Assigned to CCATT Patient Categories

PC Code	Category						
1	H	99	F,B	157	K	190	J
2	H	100	F,B	159	F,A,D	192	J
3	H	101	F,B	160	F,B,D	193	J
4	H	102	F,B	161	F,B,D	196	I
5	H,D	103	F,B	162	F,B,D	197	I
6	H,D	108	F,B	163	F,B,D	198	I
7	H	109	F,B	164	F,B,D	199	I
9	H	113	F,B	165	F,C,D	235	K
10	F	114	F,B	166	F,A,B	243	I
11	F	115	F,B	167	F,A,B	245	I
17	F,C	121	F	168	F,A,B	249	I
19	F,C	123	F,C	169	F,A,B	250	I
45	F,C	124	F,C	170	F,A,B	251	I
46	F,C	128	F,C	171	F,A,C	252	I
47	F,C	130	F,C	172	F,B	258	L
51	F,C	131	F,C	173	F,B	259	L
53	F,C	136	F,C	174	F,B	276	I
54	F,C	137	F,C	175	F,B,C	277	I
61	G,C	138	G,C	176	F,B	278	I
62	G,C	139	G,C	177	F,B	285	I
69	F	144	F,C	178	F,B,C	286	I
70	F,C	145	F,C	179	F,B,C	313	F,B
71	F,C	146	F,C	180	F,B,C		
87	F,A	147	E,F,C	181	F,B,C		
92	E	152	E	182	F,A,C,D		
94	E	153	E	183	F,A,B,C		
97	F	154	E	184	F,A,B		
98	F,B	155	E	185	F,B		

A – Post Surgical Thoracic

B – Post Surgical Staged Exploratory Lap

C – Post Surgical Vascular/Amputation

D – Post Surgical Craniotomy

E – Burns > 20% BSA

F – Hemorrhagic Shock

G – Crush/Blunt Injury

H – Head Injury

I – Med, Acute Abdomen

J – Med, Environmental

K – Med, Anaphylaxis Asthma

L – Medical, Cardiac Event

There are also a number of multiple-injury wounds for which assigning a combination of patient categories is appropriate, as with PC 182, which includes a chest wound, soft tissue extremity wounds, and a penetrating wound to the brain (Categories F, A, C, and D). An overlap is also found in PCs associated with postsurgical staged laparotomy patients like PC 184, which calls for a staged exploratory laparotomy, but is also a post-thoracic case. As a result, both Categories A and B were assigned, so that all the tasks for PC 184 would appear in the model.

Table 3 displays the clinical care tasks assigned to Category A patients who are, for the most part, stable, and whose status or condition remain static. Also listed are additional tasks performed should the patient's status or condition change. Listed finally are those administrative and equipment support tasks that are required both to provide infrastructure in a critical care setting, and to ensure efficient patient equipment management. Appendix C displays the task profiles for all 12 patient categories.

Table 3. Task Profile for Category A – Postsurgical Thoracic Patient

Task #	Task Description
	Clinical Care Tasks
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ85	REASSESS TOURNIQUET
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status En Route	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES

Task #	Task Description
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
A6	APPLY TOURNIQUET
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVERTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ91	INSERT CHEST TUBES
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Determining Supply and Equipment Quantities

The challenge was to develop a patient stream that fully represented the mission the CCATT system supports, which calls for a very small patient stream of either 3 high-acuity or 6 low-acuity patients. PC probabilities were not used to determine stock levels for the CCATT when trying to define those PCs with which the 3 or 6 patients might likely present and still get a patient stream that reflected a representative sampling. With a long list of PCs and a low probability that many of the PCs would present, the value of grouping PCs into patient categories became more apparent because of the near statistical certainty that all tasks and associated supplies and equipment would not be captured in a simulation for such a small patient stream. Instead of having 111 possibilities to assign to at most 6 patients, considerably narrowing the field of PCs seen, there were 12 categories from which to choose that covered the range of treatment profiles likely to be seen. This method provided greater accuracy in determining supply requirements for a small patient stream, since all tasks in the 111 PC treatment profiles are included in the 12 categories.

Faced with this challenge, the SMEs agreed to include each of the 12 patient categories once in the model, considerably more than proscribed in the concept of operations. This ensured that all tasks and required supplies and equipment were called for by the model, resulting in a 100% validation of the inventory. The inventory was based on having enough medications and consumables to manage each CCATT patient for one mission.

Results

When compared with the current inventory, the revised inventory generated by ESP resulted in an 8.25% decrease in overall weight, significant for a highly mobile, air-transportable system like the CCATT. Medications increased in both weight and cube, likely attributable to the effort to prepare for worst-case scenarios and high-acuity patients. However, medication costs were kept down by using ESP to determine with greater accuracy the amounts consumed per patient. The largest cost increase is visible in the equipment category, due in part to the inclusion of expensive items necessary for intracranial pressure monitoring and draining. Consumables and durables, though streamlined, remained relatively the same in terms of cost, while each had slight changes in weight and cube. Table 4 displays the total change in weight, cube, and cost in each category, while Appendix D provides a detailed account of the changes in each inventory line item.

Table 4. Recommended Inventory Revisions

Category	Weight	Cube	Cost
Revised equipment	314.153	68.031	\$125,607.44
Current equipment	342.0265	45.74223	\$117,872.89
Difference	-27.874	22.289	\$7,734.55
Percent change	8.150	48.727	6.562
Revised medications	46.48844	6.513471	\$984.76
Current medications	34.07279	2.465683	\$1,013.90
Difference	12.416	4.048	-\$29.14
Percent change	36.439	164.165	-2.874
Revised consumables	80.107	22.570	\$2,097.01
Current consumables	101.2088	19.80899	\$1,940.60
Difference	-21.102	2.761	\$156.42
Percent change	20.850	13.938	8.060
Revised durables	8.50275	2.613917	\$542.79
Current durables	12.34992	1.702083	\$534.16
Difference	-3.847	0.912	\$8.63
Percent change	31.1514	53.5716	1.616
Revised total	449.250	99.728	\$129,232.01
Current total	489.658	69.719	\$121,361.55
Difference	-40.408	30.009	\$7,870.46
Percent change	8.252	43.043	6.485

Table 5 displays the record of changes by category. There were 4 new equipment items and 2 new consumables. Requirements for 80 items remained the same, whereas the requirement decreased for 135 items, 88 of which were consumables. Seventy-five items increased amounts, 39 of which were medications, a noteworthy change, likely due to the high-acuity patient stream used.

Table 5. Record of Change Totals

Category	Same	Decrease	Increase	New Items
Equipment	40	9	6	4
Medications	12	35	39	0
Consumable	24	88	27	2
Durables	4	3	3	0
Total	80	135	75	6

Due to the nature of equipment items, which can be used numerous times on the same patient or frequently used on all patients, there was very little change in that category. Good examples of this are stethoscopes and blood pressure cuffs, which are used repeatedly on all patients. Magill forceps, however, can be used only once per patient, since sterilization is unavailable during a CCATT mission. The 12 times they were called for in the model represents an increase in the requirement. A relatively small item like the respirator/lung test, which went from two in the current inventory to six in the revised, has minimal impact on weight and cube, but costs \$50, accounting for a \$200 cost increase. Decreases in equipment included flashlights, that went from 20 in the current inventory to 3 in the revised; skin surface temperature probes, which dropped from 18 to 10; and blood pressure cables, which decreased from 6 to 4. This last item had minimal impact on weight and cube totals, but represented a \$231 decrease for the requirement.

Medication and consumable amounts were based on per-patient consumption. For instance, morphine, 10 mg per ml in 1-ml vials, comes in packages of 25 vials. The model's clinical requirement calls for 15 mg or 1.5 vials to be administered every 4 hours per patient, over a 24-hour period. The resulting total, based on those patients requiring pain management, was 42 vials or 2 (1.68) packages.

Medications increased marginally in weight and cube yet decreased in total cost. The differences are attributable to items like 100-ml bags of dextrose for injection, which, though relatively inexpensive, add some weight; 17 bags were required instead of the current 12. Conversely, glucagon for injection

went from 2 in the current inventory to 1 in the revised, representing a \$44 decrease, but with minimal impact on weight and cube.

The model called for eight antibiotics, estimations for which were based on kinds of injuries sustained and the broad spectrum of coverage required. Battle injuries in general require gram-negative antibiotics that are also aminoglycosides.⁸ Therefore, gentamicin was made more readily available for combat injuries and patients than for other patient categories. Ceftriaxone was included across the board because of its broad-spectrum gram-negative and anaerobic properties. SMEs recommended making cefazolin the least available, as it is redundant with ceftriaxone in the inventory, and not as effective. Finally, amoxicillin clavulanate is provided in tablet form, though excluded from those patient categories for which using oral medication is not feasible. A variety of antibiotics allows for flexibility in dealing with patients' allergies, or for potential drug resistance to a suspected infective agent.

Performing cardiopulmonary resuscitation (CPR) calls for large amounts of medication. There were 16 medications in the inventory correlated to this task, all of which were included in the model, ensuring availability across the spectrum of cardiac events. For instance, amiodarone and adenosine, both antidysrhythmic medications used for severe ventricular tachycardia, were equally represented in the model. Dosages of lidocaine and procainamide, also antidysrhythmics, were likewise required in equal amounts to perform tasks related to CPR.

SMEs reported that cardiac active drugs like the digoxin and magnesium sulfate, inhalant drugs like albuterol and epinephrine, and vasoactive drugs like norepinephrine, phenylephrine, and epinephrine have numerous applications for the critically ill or injured. Therefore, these were made available nearly universally across patient categories. There were also repeated-use medications like propofol and albuterol. Both of the propofols listed are the same strength, but one is a multi-dose vial and the other, single use. In the case of the albuterols, one is a spray and the other, in solution form; each is available in the model in appropriate amounts.

Consumables are items that can only be used once, like bandages, hypodermic needles, and nasal gastric tubes. These were calculated based on per-patient requirements, and there were universal decreases in weight, cube, and cost across this category.

Durables, such as nonrechargeable batteries, plastic bags, and sharps containers, can be used a number of times by one or all of the patients and discarded when used to their full potential. Two

types of sharps containers were listed in the inventory, and both were included in the model. The CCATT patient stream did not require many changes in durable items.

Discussion and Conclusion

The entire CCATT inventory was mapped to clinical tasks. SMEs considered whether to include tasks not required by any PC in the model but for which equipment is available in the inventory. For instance, should they add the task “placing a patient in respiratory care” because a respirator and filter are in the inventory? They also considered medications that prevent HIV transmission in the event of an accidental needle stick, but decided that this event is not supported by the list of PCs, so they did not include them in the model. Tracheostomy care, however, is supported by materiel in the CCATT inventory and was added to the ESP PCs and tasks in the database.

An inventory was generated using ESP that satisfied the materiel requirement for 12 patient categories covered by the CCATT mission statement. Despite using a larger patient stream (12 instead of 3 or 6), changes in the current configuration decreased both weight and cube while increasing clinical capability. Reconfiguring inventory is possible because ESP provides detailed consumption analysis based on per-patient type AS materiel requirements. SME input improved accuracy in associating tasks to supplies and equipment, while maintaining standards of practice.

The 111 PCs, identified by SMEs as those managed by a CCATT UTC and within their scope of care, were linked to clinical tasks that were ultimately compared with the AS inventory. Grouping the PCs into 12 patient categories based on common clinical tasks for similar PCs was pivotal, in that it allowed all of the tasks to be called for in the model from a much smaller array of patients than 111 PCs would suggest. Supplies and equipment could thus cover many possible injuries rather than a few. All equipment items modeled in the AS were represented in the final analysis.

Exporting ESP capabilities to inventories other than those of the Navy and Marine Corps proved to be a viable method of evaluating other preexisting medical systems’ capabilities.⁹ ESP determines appropriate stock levels for equipment and consumable supplies for a wide array of PCs, and in this case did so for a large, high-acuity patient stream. ESP is also a highly effective tool with which to configure resupply packs, ensuring medical materiel sustainment across the spectrum of medical care facilities while maintaining their clinical capability.

The ESP simulation creates an audit trail establishing clinical requirements for supply items in medical system inventories, enabling logisticians, medical planners, and MEFPAK managers to

validate current inventories and perform analyses of projected changes to future ones. It also serves as a leading consumption indicator, making it easier to identify resupply requirements to ensure sustainment when deployed.^{9,10}

Analysts and planners involved with casualty care will also be able to perform risk assessments for their medical capabilities by inputting patient stream data into the NHRC Tactical Medical Logistics Planning Tool (TML+).¹¹ By simulating patient flow, TML+ shows patient disposition and utilization of resources as casualties proceed through the medical chain of evacuation, illustrating by LOC and functional area how supplies will be consumed. In-theater MTF laydowns include medical transportation assets, personnel, and equipment, providing a logical extension to inventory creation and validation by reviewing its use over time using real data in calculated scenarios.

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Appendix B. 111 CCATT Patient Conditions

- 0001 Cerebral Concussion, Closed, with/without Nondepressed Linear Skull Fracture, Severe—Loss of Consciousness from 2 to 12 Hours.
- 0002 Cerebral Concussion, Closed, with/without Nondepressed Linear Skull Fracture, Moderate— Loss of Consciousness less than 2 Hours.
- 0003 Cerebral Contusion, Closed, with/without Nondepressed Linear Skull Fracture, Severe—Loss of Consciousness greater than 24 Hours, with Focal Neurological Deficit.
- 0004 Cerebral Contusion, Closed, with/without Nondepressed Linear Skull Fracture, Moderate—Loss of Consciousness from 12 to 24 Hours, without Focal Neurological Deficit.
- 0005 Cerebral Contusion, Closed, with Intracranial Hematoma, with/without Nondepressed Linear Skull Fracture, Severe—Large Hematoma (Including Epidural Hematoma) with Rapidly Deteriorating Comatose Patient.
- 0006 Cerebral Contusion, Closed, with Nondepressed Linear Skull Fracture, Severe—Loss of Consciousness greater than 24 Hours, with/without Focal Neurological Deficit.
- 0007 Cerebral Contusion, Closed with Depressed Skull Fracture, Severe with Associated Intracerebral Hematoma and/or Massive Depression.
- 0009 Cerebral Contusion with Open Skull Fracture, Severe with Intracranial Fragments and/or Depressed Skull Fracture; Eyelid and Eyeball Laceration with Retained Intraocular Foreign Body.
- 0010 Cerebral Contusion with Open Skull Fracture, Moderate—without Intracranial Fragments and/or Depressed Skull Fracture.
- 0011 Intracranial Hemorrhage, Spontaneous, Nontraumatic, All Cases.
- 0017 Wound, Face, Jaws, and Neck, Open, Lacerated with Associated Fractures, excluding Spinal Fractures, Severe—with Airway Obstruction.
- 0019 Wound, Face and Neck, Open, Lacerated, Contused without Fractures, Severe—with Airway Obstructions and/or Major Vessel Involvement.
- 0045 Wound, Upper Arm, Open, Penetrating, Lacerated, without Fracture, Severe—with Nerve and/or Vascular Injury.
- 0046 Wound, Upper Arm, Open, Penetrating, Lacerated, without Fracture, Moderate—without Nerve or Vascular Injury.
- 0047 Wound, Upper Arm, Open with Fractures and Nerve and Vascular Injury, Arm Not Salvageable.
- 0051 Wound, Forearm, Open, Lacerated, Penetrating, without Bone, Nerve or Vascular Injury, with Major Loss of Muscle Tissue, Severe—Requiring Major Debridement.
- 0053 Wound, Forearm, Open, Lacerated, Penetrating, with Fracture and with Nerve and Vascular Injury, Forearm Not Salvageable.
- 0054 Wound, Forearm, Open, Lacerated, Penetrating, with Fracture and with Nerve and Vascular Injury, Forearm Salvageable.
- 0061 Crush Injury, Upper Extremity, Severe—Limb Not Salvageable.
- 0062 Crush Injury, Upper Extremity, Moderate—Limb Salvageable.
- 0069 Amputation, Hand, Traumatic, Complete, All Cases.
- 0070 Amputation, Forearm, Traumatic, Complete, All Cases.
- 0071 Amputation, Full Arm, Traumatic, Complete, All Cases.
- 0087 Wound, Thorax (Anterior or Posterior), Open, Penetrating, with Associated Rib Fractures and Pneumohemothorax, Acute, Severe Respiratory Distress.
- 0092 Burn, Thermal, Partial Thickness, Trunk, greater than 20 percent but less than 30 percent of Total Body Area Involved.
- 0094 Burn, Thermal, Full Thickness, Trunk, greater than 20 percent but less than 30 percent of Total Body Area Involved.
- 0097 Wound, Abdominal Wall (Anterior or Posterior), Lacerated, Abraded, Contused, Avulsed without Entering Abdominal Cavity, Not Requiring Major Debridement.
- 0098 Wound, Liver, Closed, Acute (Crush Fracture), Major Liver Damage.
- 0099 Wound, Liver, Closed, Acute (Crush Fracture), Minor Liver Damage.
- 0100 Wound, Spleen, Closed, Acute (Crush Fracture), All Cases.
- 0101 Wound, Abdominal Cavity, Open, with Lacerating, Penetrating, Perforating Wound to the Large Bowel.
- 0102 Wound, Abdominal Cavity, Open, with Lacerating, Penetrating, Perforating Wound to Small Bowel, without Major or Multiple Resections.
- 0103 Wound, Abdominal Cavity, Open, with Penetrating, Perforating Wound of Liver, Major Damage.
- 0104 Wound, Abdominal Cavity, Open, with Penetrating, Perforating Abdominal Wound with Lacerated Liver.

Appendix B. 111 CCATT Patient Conditions

- 0105 Wound, Abdominal Cavity, Open, with Penetrating, Perforating Wound of Spleen.
- 0106 Wound, Abdominal Cavity, Open, with Lacerated, Perforated Wound with Shattered Kidney.
- 0107 Wound, Abdominal Cavity, Open, with Lacerated, Penetrating, Perforating Wound with Lacerated Kidney, Initially Repaired, but Subsequent Nephrectomy.
- 0108 Wound, Abdominal Cavity, Open with Lacerated, Penetrating, Perforated Wound with Shattered Bladder.
- 0109 Wound, Abdominal Cavity, Open with Lacerated, Penetrating, Perforated Wound with Lacerated Bladder.
- 0112 Displaced Fracture of Pelvis, Closed, with Associated Soft Tissue Damage and Pelvic Organ Damage.
- 0113 Non-Displaced Fracture of Pelvis, Closed, with Associated Soft Tissue Damage.
- 0114 Wound, Abdomen, Open, with Pelvic Fracture and Penetrating, Perforating Wounds to Multiple Pelvic Structures (Male or Female).
- 0115 Wound, Abdomen, Open, with Pelvic Fracture and Penetrating, Perforating Wounds to Pelvic Colon Only (Male or Female).
- 0121 Wound, Thigh, Open, without Fracture, Nerve, or Vascular Injury, Requiring Major Debridement.
- 0123 Wound, Thigh, Open, Lacerated, Penetrating, Perforating with Fracture and Nerve/Vascular Injury, Limb Not Salvageable.
- 0124 Wound, Thigh, Open, Lacerated, Penetrating, Perforating, with Fracture and Nerve and/or Vascular Injury, Limb Salvageable.
- 0128 Wound, Lower Leg, Open, Lacerated, Penetrating, Perforating, without Fractures, Requiring Major Debridement.
- 0130 Wound, Lower Leg, Open, Lacerated, Penetrating, Perforating, with Fracture and Nerve/Vascular Injury, Limb Not Salvageable.
- 0131 Wound, Lower Leg, Open, Lacerated, Penetrating, Perforating, with Fracture and Nerve and/or Vascular Injury, Limb Salvageable.
- 0136 Wound, Ankle, Foot, Toes, Open, Penetrating, Perforating, with Fractures and Nerve/Vascular Injury, Limb Not Salvageable.
- 0137 Wound, Ankle, Foot, Toes, Open, Penetrating, Perforating, with Fractures and Nerve and/or Vascular Injury, Limb Salvageable.
- 0138 Crush Injury, Lower Extremity, Limb Not Salvageable.
- 0139 Crush Injury, Lower Extremity, Limb Salvageable.
- 0145 Amputation, Below Knee, Traumatic, Complete, All Cases.
- 0146 Amputation, Traumatic, Complete, Requiring Hip Disarticulation.
- 0147 Amputation, Above Knee, Traumatic, Complete.
- 0152 Burn, Thermal, Partial Thickness, Lower Extremities and Genitalia, greater than 30 percent but less than 40 percent of Total Body Area Involved.
- 0153 Burn, Thermal, Partial Thickness, Lower Extremity and Genitalia, greater than 15 percent but less than 30 percent of Total Body Area Involved.
- 0154 Burn, Thermal, Full Thickness, Lower Extremities and Genitalia, greater than 30 percent but less than 40 percent of Total Body Area Involved.
- 0155 Burn, Thermal, Full Thickness, Lower Extremity and Genitalia, greater than 15 percent but less than 30 percent of Total Body Area Involved.
- 0157 Insect Bites and Stings (Unspecified Body Area) with Systemic Symptoms and/or Respiratory Difficulty.
- 0159 Multiple Injury Wound (MIW) Brain and Chest with Sucking Chest Wound and Pneumohemothorax.
- 0160 MIW Brain and Abdomen with Penetrating, Perforating Wound, Colon.
- 0161 MIW Brain and Abdomen with Penetrating, Perforating Wound, Kidney.
- 0162 MIW Brain and Abdomen with Penetrating, Perforating Wound, Bladder.
- 0163 MIW Brain and Abdomen with Shock and Penetrating, Perforating Wound, Spleen.
- 0164 MIW Brain and Abdomen with Shock and Penetrating, Perforating Wound, Liver.
- 0165 MIW Brain and Lower Limbs Requiring Bilateral Above Knee Amputations.
- 0166 MIW Chest with Pneumohemothorax and Abdomen with Penetrating Wound, Colon.
- 0167 MIW Chest with Pneumohemothorax and Abdomen with Penetrating, Perforating Wound, Kidney.
- 0168 MIW Chest with Pneumohemothorax and Abdomen with Perforating Wound, Bladder.
- 0169 MIW Chest with Pneumohemothorax and Abdomen with Penetrating, Perforating Wound, Spleen.
- 0170 MIW Chest with Pneumohemothorax and Abdomen with Penetrating, Perforating Wound, Liver.

Appendix B. 111 CCATT Patient Conditions

- 0171 MIW Chest with Pneumohemothorax and Limbs with Fracture and Vascular Injury.
- 0172 MIW Abdomen with Penetrating, Perforating Wound of Colon and Bladder.
- 0173 MIW Abdomen with Penetrating, Perforating Wound of Colon and Spleen.
- 0174 MIW Abdomen with Penetrating, Perforating Wound of Colon and Liver.
- 0175 MIW Abdomen and Limbs with Penetrating, Perforating Wound of Colon and Open Fracture and Neurovascular Injury of Salvageable Lower Limb.
- 0176 MIW Abdomen and Pelvis with Penetrating, Perforating Wound of Liver and Kidney.
- 0177 MIW Abdomen and Pelvis with Penetrating, Perforating Wounds of Spleen and Bladder.
- 0178 MIW Abdomen, Pelvis, Limbs, with Fracture and Neurovascular Injury, Limb Salvageable, and Penetrating Wound, Kidney.
- 0179 MIW Abdomen, Pelvis, Limbs, without Fracture or Neurovascular Injury, and Penetrating, Perforating Wound, Bladder.
- 0180 MIW Abdomen and Lower Limbs, with Fracture and Nerve Injury, with Penetrating Wound of Spleen, with Full Thickness Burns to greater than 20 percent of TBSA.
- 0181 MIW, Abdomen and Limbs, without Fracture or Nerve Injury, with Penetrating Wound of Liver.
- 0182 MIW Chest with Pneumohemothorax, Soft Tissue Injury to Upper Limbs, and Penetrating Wound of Brain.
- 0183 MIW Chest with Pneumohemothorax, Soft Tissue Injury to Upper Limbs and Abdomen, with Wound of Colon.
- 0184 MIW Chest with Pneumohemothorax, Pelvis and Abdomen, with Wound of Colon and Bladder.
- 0185 MIW Abdomen and Chest with Multiple Organ Damage.
- 0190 Frostbite, Full Skin Thickness or Deeper Involvement.
- 0192 Hypothermia, Severe.
- 0193 Heat Stroke.
- 0196 Appendicitis, Acute, with Perforation, Rupture, Peritonitis.
- 0197 Appendicitis, Acute, without Perforation, Rupture, Peritonitis.
- 0198 Inguinal Hernia, Complicated, Direct or Indirect, Sliding, Incarceration of Bowel.
- 0199 Inguinal Hernia, Uncomplicated, Direct or Indirect, No Sliding, No Incarceration of Bowel or Bladder.
- 0235 Asthma, with Disabling Symptoms or Repeated Attacks.
- 0243 Food Poisoning, All Organisms, Disabling Symptoms.
- 0245 Diarrheal Disease, Severe.
- 0249 Peptic Ulcer, Gastric or Duodenal, Penetrating and/or Perforating.
- 0250 Peptic Ulcer, Gastric or Duodenal, Uncomplicated.
- 0251 Regional Ileitis, Disabling Symptoms, Unresponsive to Treatment.
- 0252 Regional Ileitis, Responds to Treatment.
- 0258 Severe Hypertension.
- 0259 Ischemic Heart Disease.
- 0276 Nephrotic Syndrome, All Cases.
- 0277 Urethral Calculus, Causing Obstruction, Impacted.
- 0278 Urethral Calculus, Not Causing Obstruction.
- 0285 Cholecystitis, Acute with Stones, All Cases.
- 0286 Pancreatitis, Acute, All Cases.
- 0313 Wound, Abdominal Cavity, Open, with Lacerated, Penetrating, Perforating Wound, Kidney, Moderate—Kidney Salvageable.

Appendix C. Task Profiles for CCATT Patient Categories

Category A – Post Surgical Thoracic

Patient will present w/litter, blanket; 100% w/mechanical ventilation, 100% neuromuscular blockade, venous access (angio-cath, or lock); 25% will have central line, 100 Foley, NG/OG tube and Pleur-evac; 75% unconscious; 100% coagulopathic and hypothermic; 5% sBP < 90; 95% sBP 90-110. Resuscitation will likely require RBCs and volume expansion fluids.

Task #	Task Description
Clinical Care Tasks	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ85	REASSESS TOURNIQUET
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
002	ASSESS PATIENT STATUS
002	ASSESS PATIENT STATUS
002	ASSESS PATIENT STATUS
Change in Patient Status En Route	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
A6	APPLY TOURNIQUET
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ91	INSERT CHEST TUBES
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category B – Post Surgical Staged Exploratory Lap

Patient will present w/ litter, 100% w/mechanical ventilation, 100% neuromuscular blockade w/ venous access (angio-cath, lock) 25% central line, 100% Foley, NG/OG tube; 85% unconscious; 100% coagulopathic and hypothermic; 15% sBP <90; 85% sBP 90-100. Resuscitation may continue during transport, which may include administering fluids for volume expansion.

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ91	INSERT CHEST TUBES
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category C — Postsurgical Vascular/Amputation

Patient will present w/ litter, 15% w/mechanical ventilation, venous access (angio-cath, or lock), 15% w/ central line, 75% Foley, 10% NG/OG tube; 50% unconscious; 15% in severe shock, 85% hypothermic; 15% sBP < 90, 85% sBP 90-110; 50% will be able to communicate temperature and sensation of injured extremity(s). Resuscitation may continue during transport, which may include administering fluids for volume expansion.

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ68	MAINTAIN APPROPRIATE SKELETAL IMMOBILIZATION
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ85	REASSESS TOURNIQUET
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
A6	APPLY TOURNIQUET
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ91	INSERT CHEST TUBES
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category D — Post Surgical Craniotomy

Patient will present w/ litter, blanket, 100% mechanically ventilated, venous access (angio-cath, lock, or central line), 100% Foley, 100% NG/OG tube, seizure control meds (phenytoin) administered at sending facility; 90% unconscious; 15 % will require ICP monitoring and 5% ICO monitoring and drainage; 80% sBP = 100-120, 20% sBP > 120 and need intervention; CO₂=30 (approx) and will require monitoring during transport. Resuscitation will continue during transport (may include 500 cc Hespan and/or 2 l NaCl).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
Z110	SET UP ICP MONITOR
Z111	SET UP ICP MONITOR AND DRAIN
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ68	MAINTAIN APPROPRIATE SKELETAL IMMOBILIZATION
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SpO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ93	MANAGE SEIZING PATIENT
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category E – Burns 20% BSA or Greater

Patient will present w/h litter, blanket, 50% w/mechanical ventilation, 50% O₂ by mask, venous access x2 (angio-cath, or lock), 100% Foley, 100% NG/OG tube, Burn dressings applied by sending facility, maintained en route; 10% inhalation injury, 15% unconscious; 15% in shock, 100% hypothermic, require warmed infusion fluids/warming blankets en route; 15% sBP < 90, 85% sBP 90-110. Resuscitation to continue during transport (may include 500 cc Hespan and 2 l lactated Ringers).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
073	PERFORM SUCTION (NG/OG TUBE)
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ69	MONITOR/ASSESS/MANAGE BP/PULSE
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ87	MAINTAIN DRY DRESSINGS
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
ZZ94	EMERGENT ESCHAROTOMY
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category F — Class III & IV Hemorrhage/Shock

Patient will present w/ litter, blanket, venous access (65% angio-caths, 35% central lines), 15% Foley, 15% NG/OG tube, 10% E-T tube, extnl. bleeding controlled by pressure dressings or tourniquets, and fractures immobilized, all by sending facility; 90% conscious; 80% sBP = <90, all w/decreased LOC, cool, pale skins, pulse >100, resp >20. All will require O₂ by mask, dressings reinforced during transport. Resuscitation fluids will be pressure infused en route [to include up to 2 units RBCs by sending facility (Surg Co./FRSS only), 500 cc Hespan, and/or 4 l NaCl].

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ81	MANAGE CHEST TUBES INCLUDING SUCTION
ZZ84	MANAGE SALINE LOCK
ZZ85	REASSESS TOURNIQUET
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
A6	APPLY TOURNIQUET
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ91	INSERT CHEST TUBES
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)

Appendix C. Task Profiles for CCATT Patient Categories

Category G — Crush/Blunt Trauma

Patient will present w/ litter, blanket, 10 % mechanically ventilated; 90% w/ O₂ by mask, venous access (angio-cath, lock, or central line), 100% Foley, 75% have NG/OG tube; 80% w/ bilateral extremity injury; 15% w/ associated pelvic fracture; 35% w/ metabolic acidosis, myoglobinuria, and rhabdomyolysis; 15% unconscious; 15% altered LOC; 75% sBP = 100-120; 25% sBP <100 and need intervention to increase during transport, pulse >100, resp will be >20 & shallow. Emphasis for care en route will be osmotic renal diuresis and monitoring urine output. Resuscitation will continue during transport (may include 500 cc Hespan and/or 2 l NaCl).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GLASGOW)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
062	IV INFUSION BLOOD PRODUCTS
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ68	MAINTAIN APPROPRIATE SKELETAL IMMOBILIZATION
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ74	MONITOR/ASSESS/MANAGE CENTRAL VENOUS PRESSURE
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ85	REASSESS TOURNIQUET
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
019	CONTROL EXTERNAL HEMORRHAGE
065	INSERT CENTRAL LINES
079	CATHETERIZATION FOLEY
A6	APPLY TOURNIQUET
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category H - Head Trauma

Patient will present w/ litter, blanket, 60% mechanically ventilated, 40% O₂ by mask, venous access (angio-cath, lock), 15% Foley, 100% NG/OG tube, seizure control meds (phenytoin) administered at sending facility, osmotics, if required, provided by sending facility; 95% unconscious; 15% require ICP monitoring and 5% ICO monitoring and drainage 80% sBP = 100-120, 20% sBP > 120 and need intervention. Resuscitation will continue during transport (may include 1-2 l NaCl).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GCS, PUPILLARY EXAM)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
087	CHANGE/REINFORCE DRESSING
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
Z107	BASE EXCESS
Z110	SET UP ICP MONITOR
Z111	SET UP ICP MONITOR AND DRAIN
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ93	MANAGE SEIZING PATIENT
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
065	INSERT CENTRAL LINES
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ03	PERFORM NEEDLE THORACOSTOMY
ZZ07	TRACH CARE
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)
ZZ68	MAINTAIN APPROPRIATE SKELETAL IMMOBILIZATION

Appendix C. Task Profiles for CCATT Patient Categories

Category I — Acute Abdomen

Patient will present w/ litter, blanket, venous access (angio-cath, lock), 75% NG/OG tube, 35% O₂ by mask. Patient alert w/ low-grade fever, anxious, lies in guarded lateral position; sBP >120, resp >20 and shallow, pulse >90; 5% w/ tense, rigid, or distended abdomen; 75% w/nausea, vomiting, or diarrhea en route. Patients will require fluid therapy en route (85% will require 500 cc Hespan and/or 1-2 l crystalloid, 15% will require >2 l crystalloid resuscitation for ongoing internal hemorrhage during transport).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GCS)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ84	MANAGE SALINE LOCK
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
065	INSERT CENTRAL LINES
071	INSERT NG/OG TUBE
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
ZZ07	TRACH CARE
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category J — Environmental Emergency

Patient will present w/litter, blanket, 10% mechanically ventilated; 90% w/ O₂ by mask, venous access (angio-cath, lock, or central line), 10% E-T tube, gentle intubation technique not found to predispose patient to VF; 35% NG/OG tube, 35% Foley, cold/heat packs and seizure control meds (phenytoin) administered at sending facility; 65% cold emergency; 35% heat emergency; 75% unconscious; 25% conscious w/ altered LOC. Cold emergencies w/SBP <90, pulse <60, resp <12. Heat emergencies w/pulse >110, resp >20. Resuscitation continue during transport (cold emergencies receive 1 l warmed NaCl during first 2 hr period, heat emergencies receive ~2-4 l depending on urinary output monitored during transport).

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GCS)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
073	PERFORM SUCTION (NG/OG TUBE)
082	MEASURE/RECORD URINARY OUTPUT
145	ADMINISTER MEDICATIONS
595	BLOOD GAS ESTIMATION
Z107	BASE EXCESS
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ71	MONITOR/ASSESS/MANAGE CORE TEMP
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂ *4
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ93	MANAGE SEIZING PATIENT
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
065	INSERT CENTRAL LINES
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)

Appendix C. Task Profiles for CCATT Patient Categories

Category K — Anaphylaxis/Asthma

Patient will present w/ litter, blanket, 15% mechanically ventilated, 85% w/ O₂ by mask, venous access (angio-cath, lock), 15% E-T tube, 15% NG/OG tube; 90% conscious, 15% sBP <100, 15% pulse >100, resp >20 and shallow w/ stridor; 15% patients will receive 2 l NaCl rapid infusion, 85% will receive 1 l NaCl TKO during transport.

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GCS)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
073	PERFORM SUCTION (NG/OG TUBE)
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
603	BLOOD GLUCOSE
Z107	BASE EXCESS
ZZ58	PRESSURE INFUSE IV FLUID
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
065	INSERT CENTRAL LINES
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
Z103	RE-ESTABLISH IV ACCESS (INTRAOSSEOUS)
ZZ07	TRACH CARE
ZZ42	ACTIVE PATIENT REWARMING (CHILLBUSTER OR SIMILAR)
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

Appendix C. Task Profiles for CCATT Patient Categories

Category L — Cardiac Event

Patient will present w/ litter, blanket, <10% mechanically ventilated, 90% will require O₂ by mask, venous access (angio-cath, lock), 10% E-T tube; 95% conscious, diaphoretic, resp >20 and shallow.

Task #	Task Description
Clinical Care	
002	ASSESS PATIENT STATUS
010	ASSESS NEUROLOGICAL STATUS (GCS)
017	PERFORM SUCTION (OROPHARYNX)
022	O ₂ ADMINISTRATION SETUP EQUIPMENT
023	O ₂ ADMINISTRATION CONTINUOUS (MASK)
038	MAINTAIN ON VENTILATOR
050	ADMINISTER IV FLUID
145	ADMINISTER MEDICATIONS
149	BLOOD DRAWING VENOUS
595	BLOOD GAS ESTIMATION
Z107	BASE EXCESS
ZZ65	CONDUCT PATIENT HAND-OFF
ZZ67	SECURE PATIENT TO LITTER/AIRFRAME
ZZ69	MONITOR/ASSESS/MANAGE BP/MAP
ZZ70	MONITOR/ASSESS/MANAGE EKG/PULSE
ZZ72	MONITOR/ASSESS/MANAGE SPO ₂
ZZ73	MONITOR/ASSESS/MANAGE CO ₂
ZZ75	PROVIDE VISUAL/AUDIBLE INSTRUCTION/REASSURANCE
ZZ76	MANAGE/SECURE LINES & TUBES
ZZ77	ASSESS AIRWAY/BREATHING
ZZ80	PERFORM SUCTION (E-T TUBE/TRACH TUBE)
ZZ84	MANAGE SALINE LOCK
ZZ97	ASSESS/INSTRUCT/REASSURE COMMUNICATIONS w/PATIENT
Change in Patient Status	
006	INSERT AIRWAY (ORO/NASO PHARYNGEAL)
007	PERFORM EMERGENCY CRICOHYOIDOTOMY
065	INSERT CENTRAL LINES
079	CATHETERIZATION FOLEY
Z014	PERFORM RAPID SEQUENCE INTUBATION
Z027	CARDIOPULMONARY RESUSCITATION
Z038	HYPERVENTILATE PATIENT
ZZ07	TRACH CARE
ZZ64	SEDATE AGITATED PATIENT
ZZ89	RE-ESTABLISH IV ACCESS (ANGIOCATH)
ZZ90	MANAGEMENT OF PARALYTIC/SEDATIVE DRUGS
ZZ92	REVERSE NARCOTIC-INDUCED RESPIRATORY DEPRESSION
Administrative and Equipment Support	
197	CHARTING & PAPERWORK - PATIENT SPECIFIC
351	TEAM PREPARATION
Z100	MANAGE PATIENT PERSONAL EFFECTS
Z101	CONDUCT PMI EXCHANGE
Z102	TROUBLESHOOT EQUIPMENT
ZZ66	PROVIDE PATIENT PROTECTIVE EQUIPMENT
ZZ95	COLLECT & MANAGE BIOWASTE
ZZ96	ASSEMBLE/REPLENISH/RESUPPLY MATERIEL
ZZ98	PREV MAINTENANCE, CHECKS, & SERVICES OF EQUIP (PMCS)
ZZ99	CONDUCT OPERATIONAL RISK MANAGEMENT (ORM)

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Same	6630014112405	ANALYZER CLINICAL CHEMISTRY I-STAT	1.00	EA	1.00	EA	10.000	0.250	\$5,742.56	10.000	0.250	\$5,742.56	0.000	0.000	\$0.00
Same	6515015077165	BACKPACK MED TRAUMA BLACK CCATT ADULT BASIC	3.00	EA	3.00	EA	12.600	4.500	\$1,456.05	12.600	4.500	\$1,456.05	0.000	0.000	\$0.00
Same	6545013958558	BAG MEDICAL INSTR & SUPPLY SET SURG INSTR	1.00	EA	1.00	EA	1.300	0.021	\$240.00	1.300	0.021	\$240.00	0.000	0.000	\$0.00
Same	7610014488257	BOOK ENTITLED 'CRITICAL CARE CHECK MATE'	1.00	EA	1.00	EA	0.001	0.001	\$33.00	0.001	0.001	\$33.00	0.000	0.000	\$0.00
Decrease	6515014763906	CABLE BLOOD PRESSURE	4.00	EA	6.00	EA	2.600	0.048	\$462.00	3.900	0.072	\$693.00	-1.300	-0.024	-\$231.00
Same	6515015010661	CABLE PULSE OXIMETRY 96" LG U/W PROPAC MONIT	3.00	EA	3.00	EA	1.650	0.330	\$195.00	1.650	0.330	\$195.00	0.000	0.000	\$0.00
New Item	6515014346106	CABLE PRESSURE TRANSDUCER	2.00	EA	0.00	EA	4.000	0.100	\$237.16	0.000	0.000	0.000	4.000	0.100	\$237.16
New Item	6515NCM050007	CABLE SENSOR ICP COD-ICU(PART #82- 6621)	2.00	EA	0.00	EA	1.000	20.320	\$542.00	0.000	0.000	0.000	1.000	20.320	\$542.00
Same	6515014776155	CASE BURNS TRAUMA GEAR BAG PLASTIC INSERT #3	4.00	EA	4.00	EA	5.600	4.400	\$305.20	5.600	4.400	\$305.20	0.000	0.000	\$0.00
Same	6515015007559	CASE CATH CORDURA NYLON PART OF IV SYS SET	1.00	EA	1.00	EA	0.250	0.120	\$17.36	0.250	0.120	\$17.36	0.000	0.000	\$0.00
Same	6515014738678	CASE DRUG 21.75"x17"x 8" HINGED HRD PLSTC	1.00	EA	1.00	EA	0.500	1.500	\$226.40	0.500	1.500	\$226.40	0.000	0.000	\$0.00
Same	6515015180212	CASE LARYNGOSCOPE NYLON COMP OF 6515014776128	2.00	EA	2.00	EA	6.000	1.180	\$98.56	6.000	1.180	\$98.56	0.000	0.000	\$0.00
Same	6515014776093	CASE NARCOTICS 10.75"O/A LG 9.75"W 5.0"H BLAC	2.00	EA	2.00	EA	1.600	1.380	\$57.04	1.600	1.380	\$57.04	0.000	0.000	\$0.00
Same	6515015053435	CHARGER BATTERY DEFIB 1x1 QUICK CHARGE ZOLL	1.00	EA	1.00	EA	2.900	0.280	\$396.00	2.900	0.280	\$396.00	0.000	0.000	\$0.00
Same	6515014570271	CONNECTOR SURG MTL CRS DIAMOND 0 ₂ QCK CONNECT	4.00	EA	4.00	EA	1.000	0.200	\$98.00	1.000	0.200	\$98.00	0.000	0.000	\$0.00
Same	6515014476398	CONNECTOR SURGICAL CORROSION RESISTING METAL	4.00	EA	4.00	EA	0.400	0.400	\$88.76	0.400	0.400	\$88.76	0.000	0.000	\$0.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Same	6515014471166	CONNECTOR SURGICAL METAL MALE X USED FOR O ₂	4.00	EA	4.00	EA	0.400	0.400	\$11.36	0.400	0.400	\$11.36	0.000	0.000	\$0.00
Same	6530015001989	CRITICAL CARE PLATFORM SYS F/LITTERS	1.00	EA	1.00	EA	35.000	1.150	\$2,385.00	35.000	1.150	\$2,385.00	0.000	0.000	\$0.00
Same	6515013100670	CUFF SPHYGMOMANO METER BAL MANOMETER W/300ml D	3.00	EA	3.00	EA	0.930	0.570	\$178.86	0.930	0.570	\$178.86	0.000	0.000	\$0.00
Same	6515015161519	DEFIBRILLATOR, MONITOR & RECORDER	1.00	EA	1.00	EA	12.000	1.400	\$25,058.00	12.000	1.400	\$25,058.00	0.000	0.000	\$0.00
Decrease	6230015179944	FLASHLIGHT	3.00	EA	20.00	EA	8.250	0.660	\$6.30	55.000	4.400	\$42.00	-46.75	-3.740	-\$35.70
Same	6515003346800	FORCEPS HEMOSTATIC KELLY 5.5" STRAIGHT	3.00	EA	3.00	EA	0.450	0.021	\$43.62	0.450	0.021	\$43.62	0.000	0.000	\$0.00
Increase	6515003323300	FORCEPS TRACHEAL TUBE MAGILL FENESTRATED	12.00	EA	1.00	EA	7.800	0.600	\$108.12	0.650	0.050	\$9.01	7.150	0.550	\$99.11
Same	6515014774292	GAUGE COVER RESPIROMETER FOR MK B MK 14 MK 25	1.00	EA	1.00	EA	0.180	0.110	\$44.00	0.180	0.110	\$44.00	0.000	0.000	\$0.00
Decrease	4240000523776	GOGGLES INDUSTRIAL PLAST CLEAR HBB LENS	3.00	PR	8.00	PR	0.930	0.135	\$4.89	2.480	0.360	\$13.04	-1.550	-0.225	-\$8.15
Decrease	6515012882207	HANDLE LARYNGOSCOPE 1.5 VOLT BATTERY TAKES 2	1.00	EA	2.00	EA	5.000	0.056	\$60.39	10.000	0.112	\$120.78	-5.000	-0.056	-\$60.39
Decrease	4720013829231	HOSE ASSEMBLY NONMETALLIC HIGH PRESSURE 6' E.	2.00	EA	4.00	EA	2.300	0.024	\$30.56	4.600	0.048	\$61.12	-2.300	-0.024	-\$30.56
Decrease	6515012808163	INFUSOR PRESSURE BLOOD/IV 14x6" 1000ml	3.00	EA	7.00	EA	1.050	0.135	\$35.37	2.450	0.315	\$82.53	-1.400	-0.180	-\$47.16
Same	6515012935579	INJECTOR TUBE ACCOM 1 & 2ml MEDICATION NEEDLE	2.00	EA	2.00	EA	0.220	0.130	\$0.57	0.220	0.130	\$0.57	0.000	0.000	\$0.00
Same	6545013975260	INSERT MEDICAL INSTRUMENT AND SUPPLY SET BAG	4.00	EA	4.00	EA	7.600	0.008	\$186.68	7.600	0.008	\$186.68	0.000	0.000	\$0.00
New Item	6515NCM050006	INTERFACE CABLE ICP 6 PIN(PART #82-6645)	2.00	EA	0.00	EA	1.020	2.780	\$1,296.00	0.000	0.000	0.000	1.020	2.780	\$1,296.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
New Item	6515NCM050005	INTERFACE CONTROL UNIT ICP(PT #82-6605- SP)	2.00	EA	0.00	EA	3.000	2.060	\$3,950.00	0.000	0.000	0.000	3.000	2.060	\$3,950.00
Same	6515014901828	INTUBAT KT EMERG MLTIPK, CHLD30-50 ADLT50-100	2.00	KT	2.00	KT	4.200	3.600	\$2,840.00	4.200	3.600	\$2,840.00	0.000	0.000	\$0.00
Same	6630014878851	KIT PC DOWNLOAD (1)IR LINK PWR ADAPT (1) 5'CA	1.00	EA	1.00	EA	0.110	0.100	\$350.00	0.110	0.100	\$350.00	0.000	0.000	\$0.00
Increase	6515013429182	MANIFOLD ASSEMBLY OXYGEN DELIVERY NYLON CARRY	2.00	EA	1.00	EA	24.000	3.900	\$282.40	12.000	1.950	\$141.20	12.000	1.950	\$141.20
Increase	6515014781185	METER FLOW RATE INDICATING ANES & RESPI GASES	12.00	EA	4.00	EA	3.360	2.400	\$359.28	1.120	0.800	\$119.76	2.240	1.600	\$239.52
Same	6515014409394	MONITOR OXYGEN PORTABLE POWERED BY 9V AC BATT	1.00	EA	1.00	EA	9.200	0.015	\$411.75	9.200	0.015	\$411.75	0.000	0.000	\$0.00
Same	6515014322711	MONITOR PATIENT VITAL SIGNS PROPAQ 206EL	2.00	EA	2.00	EA	50.000	4.800	\$31,266.92	50.000	4.800	\$31,266.92	0.000	0.000	\$0.00
Same	5140003294306	POUCH MECHANICS TO DRY GOODS OT PILE FAB	5.00	EA	5.00	EA	0.500	0.005	\$102.85	0.500	0.005	\$102.85	0.000	0.000	\$0.00
Same	6150011768446	POWER STRIP ELECTRICAL OUTLET 13" LG 120V	3.00	EA	3.00	EA	0.300	0.003	\$46.08	0.300	0.003	\$46.08	0.000	0.000	\$0.00
Same	6630014222098	PRINTER ANALYZER PORTABLE USED W/HAND HELD AN	1.00	EA	1.00	EA	0.210	0.006	\$126.27	0.210	0.006	\$126.27	0.000	0.000	\$0.00
Decrease	6515013658920	PROBE TEMPERATURE MONITORING SKIN SURF THERMI	10.00	EA	18.00	EA	0.005	0.001	\$2.39	0.009	0.001	\$4.29	-0.004	0.000	-\$1.91
Same	6515014864310	PUMP IV INFUSION 3-CHANNEL VOLUMETRI PORTABLE	3.00	EA	3.00	EA	7.500	0.600	\$17,505.90	7.500	0.600	\$17,505.90	0.000	0.000	\$0.00
Same	6515014470061	REGULATOR PRESSURE TRACH TUBE CUFF	1.00	EA	1.00	EA	0.350	0.100	\$269.47	0.350	0.100	\$269.47	0.000	0.000	\$0.00
Same	6680014809523	REGULATR PRES MED GAS ADMIN APP 0-3000LBS PSI	2.00	EA	2.00	EA	2.500	0.500	\$285.40	2.500	0.500	\$285.40	0.000	0.000	\$0.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Same	6680014809547	REGULATR PRES MED GAS F/O ₂ SGL STAGE0-3000PSI	2.00	EA	2.00	EA	2.500	0.500	\$289.60	2.500	0.500	\$289.60	0.000	0.000	\$0.00
Increase	6530009575126	RESPIROMTR WRIGHT HALOSCALE COMP RNG 1001	6.00	EA	2.00	EA	1.020	0.102	\$303.06	0.340	0.034	\$101.02	0.680	0.068	\$202.04
Same	6515014774296	RESTRAINT SET WRIST & ANKLE	1.00	EA	1.00	EA	0.550	0.120	\$842.00	0.550	0.120	\$842.00	0.000	0.000	\$0.00
Same	6530011399499	SCISSOR BANDAGE 5.50" LG BLUNT	8.00	EA	8.00	EA	6.667	0.333	\$5.27	6.667	0.333	\$5.27	0.000	0.000	\$0.00
Increase	6515010304465	SIMULATOR QUALITY CONTROL TEST CLINICAL ANALY	6.00	EA	4.00	EA	0.720	0.036	\$75.72	0.480	0.024	\$50.48	0.240	0.012	\$25.24
Same	6630014222097	STETHSCOPE FLAT-DIAP COMB LTWT ADULT 24"	1.00	EA	1.00	EA	0.210	0.006	\$549.00	0.210	0.006	\$549.00	0.000	0.000	\$0.00
Decrease	6515009354088	SUCTION APPARATUS SURGICAL PORTABLE	3.00	EA	5.00	EA	2.100	0.900	\$16.29	3.500	1.500	\$27.15	-1.400	-0.600	-\$10.86
Increase	6515014350050	SUPP ARM BLOOD & FLUID ARMOBOARD IV REUSE 6S	4.00	EA	3.00	EA	20.000	2.000	\$7,107.96	15.000	1.500	\$5,330.97	5.000	0.500	\$1,776.99
Same	6530014551653	VENTILATOR VOLUME PTBL 8x11" UNI-VENT	3.00	EA	3.00	EA	39.000	2.250	\$18,302.70	39.000	2.250	\$18,302.70	0.000	0.000	\$0.00
Same	8415014228753	VEST MEDICAL TRAUMA BLACK NYLON MESH ONE SZ W	3.00	EA	3.00	EA	0.600	0.003	\$621.75	0.600	0.003	\$621.75	0.000	0.000	\$0.00
Decrease	5120000974136	WRENCH BOX ALL ALUMINUM 4.937" L END	1.00	EA	3.00	EA	0.150	0.001	\$5.49	0.450	0.003	\$16.47	-0.300	-0.002	-\$10.98
Same	5120002643794	WRENCH OPEN END ADJUST NON-SPARK/MAG 12"	1.00	EA	1.00	EA	0.503	0.401	\$44.36	0.503	0.401	\$44.36	0.000	0.000	\$0.00
		EQUIPMENT TOTALS					314.153	68.031	\$125,607.44	342.026	45.742	\$117,872.89	-27.87	22.289	\$7734.55
Increase	6505010767866	ACETAMINOPHEN SUPPOSITORIES 650mg ADULT 12S	5.00	PG	1.00	PG	0.579	0.006	\$1.30	0.116	0.001	\$0.26	0.463	0.005	\$1.04
Decrease	6505010171625	ACETAMINOPHEN TABLETS USP 325mg 50 TABLETS PE	1.00	BT	2.00	BT	0.002	0.000	\$0.02	0.004	0.000	\$0.03	-0.002	0.000	-\$0.02

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6505015184153	ADENOSINE INJ 3mg/ml PRE-FILLED 2ml CART	8.00	EA	4.00	EA	0.440	0.096	\$2.66	0.220	0.048	\$1.33	0.220	0.048	\$1.33
Increase	6505006802137	ALBUMIN HUMAN USP 5%/ML 250ml VIAL PER PG	6.00	PG	1.00	PG	6.480	0.400	\$185.94	1.080	0.067	\$30.99	5.400	0.334	\$154.95
Decrease	6505011169245	ALBUTEROL INHALATION 17gm CONT 200 SPRAYS	1.00	PG	3.00	PG	0.130	0.009	\$15.18	0.390	0.027	\$45.54	-0.260	-0.018	-\$30.36
Same	6505012579953	ALBUTEROL SULFATE INHALATION SOLUTION 0.5% 20	1.00	BT	1.00	BT	0.008	0.000	\$0.67	0.008	0.000	\$0.67	0.000	0.000	\$0.00
Decrease	6505NCM031535	AMIODARONE HCL 50mg/ml 3S	3.00	EA	10.00	EA	0.100	0.001	\$101.60	0.333	0.003	\$338.67	-0.233	-0.002	-\$237.07
Same	6505014309740	AMOXICILLIN AND CLAVULANATE POTASSIUM TABLETS	1.00	BT	1.00	BT	0.018	0.001	\$4.71	0.018	0.001	\$4.71	0.000	0.000	\$0.00
Same	6505010339866	ASPIRIN TABLETS USP 81mg FLAVORED ORAL CHEWAB	1.00	BT	1.00	BT	0.004	0.000	\$0.02	0.004	0.000	\$0.02	0.000	0.000	\$0.00
Decrease	6505010946196	ATROPINE SULFATE INJ 0.1mg/cc 10ml BT 10S	1.00	BT	5.00	BT	0.140	0.012	\$0.17	0.700	0.060	\$0.87	-0.560	-0.048	-\$0.69
Increase	6505011103955	BENZOCAINE BUTAMBEN AND TETRACAIN HCL TOPICA	5.00	BT	1.00	BT	2.084	0.049	\$16.85	0.417	0.010	\$3.37	1.667	0.039	\$13.48
Increase	6505012415858	BENZOIN TINCTURE COMPOUND USP 0.670ml CRUSHAB	12.00	EA	10.00	EA	0.069	0.001	\$0.06	0.058	0.001	\$0.05	0.012	0.000	\$0.01
Increase	6505015037410	CALCIUM CHLORIDE INJECTION USP 10 ml SYRINGE	10.00	EA	4.00	EA	0.550	0.120	\$17.37	0.220	0.048	\$6.95	0.330	0.072	\$10.42
Increase	6505012629508	CEFAZOLIN SODIUM STERILE USP 1gm VIAL 25 VIAL	28.00	VI	5.00	VI	2.016	0.067	\$2.26	0.360	0.012	\$0.40	1.656	0.055	\$1.86
Increase	6505012192760	CEFTRIAXONE SODIUM 1gm VIAL 10S	28.00	VI	6.00	VI	1.952	4.200	\$58.04	0.418	0.900	\$12.44	1.533	3.300	\$45.61
Increase	6505011875540	CLINDAMYCIN PHOSPHATE INJECTION 6ml VI 25S	12.00	VI	4.00	VI	0.504	0.020	\$0.95	0.168	0.007	\$0.32	0.336	0.013	\$0.63
Same	6505014926420	DEXAMETHASONE SODIUM 4mg/ml 5ml VI	4.00	VI	4.00	VI	0.088	0.019	\$0.20	0.088	0.019	\$0.20	0.000	0.000	\$0.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6505015015408	DEXTROSE INJ USP 50% 50ml CART- NDL 50s	14.00	EA	2.00	EA	0.154	0.004	\$0.18	0.022	0.001	\$0.03	0.132	0.004	\$0.16
Increase	6505013318941	DEXTROSE INJECTION USP 250ml 24S	45.00	EA	10.00	EA	0.563	0.002	\$2.36	0.125	0.000	\$0.53	0.438	0.001	\$1.84
Increase	6505013308918	DEXTROSE INJECTION USP 5% 100ml BAG 64 BAGS P	28.00	BG	12.00	BG	1.684	0.038	\$0.30	0.722	0.016	\$0.13	0.963	0.022	\$0.17
Increase	6505014621926	DEXTROSE INJECTION USP 5% 50 ml BAG 96 BAGS P	20.75	BG	16.00	BG	0.249	0.048	\$0.18	0.192	0.037	\$0.14	0.057	0.011	\$0.04
Increase	6505015053476	DIAZEPAM INJ 5mg/ml 2 ml CARTRIDGE UNIT 10S	2.00	PG	1.00	PG	0.110	0.024	\$4.71	0.055	0.012	\$2.36	0.055	0.012	\$2.36
Increase	6505005317761	DIGOXIN INJ USP .25mg/ml 2ml AMPUL 10/PG	9.50	AM	4.00	AM	0.209	0.010	\$1.60	0.088	0.004	\$0.67	0.121	0.006	\$0.92
Increase	6505015055281	DILTIAZEM HYDRCHLRDE INJ 5mg/ml 10ml VI 10S	9.00	VI	4.00	VI	0.495	0.014	\$4.84	0.220	0.006	\$2.15	0.275	0.008	\$2.69
Decrease	6505013776547	DIPHENHYDRAMINE HYDROCHLORIDE INJECTION USP 1	3.00	EA	5.00	EA	0.155	0.002	\$0.50	0.258	0.003	\$0.84	-0.103	-0.001	-\$0.34
Increase	6505014917667	DOBUTAMINE INJECTION USP 250mg 20ml VIAL 10S	5.00	VI	2.00	VI	0.275	0.060	\$1.55	0.110	0.024	\$0.62	0.165	0.036	\$0.93
Same	6505012038624	DOPAMINE HYDROCHLORIDE AND DEXTROSE INJECTION	2.00	BG	2.00	BG	1.500	0.100	\$1.38	1.500	0.100	\$1.38	0.000	0.000	\$0.00
Increase	6505015058467	ENOXAPARIN INJ 100mg IN 1ml H ₂ O FOR INJ 10S	11.50	EA	4.00	EA	0.633	0.138	\$63.84	0.220	0.048	\$22.20	0.413	0.090	\$41.63
Decrease	6505010932384	EPINEPHRINE INJ 0.1mg/ml SYR/NDL 10ml 10S	1.00	EA	8.00	EA	0.160	0.014	\$0.20	1.280	0.112	\$1.58	-1.120	-0.098	-\$1.39
Same	6505015141058	EPINEPHRINE INJ 1mg/ml 30ml MULTI DOSE VI 5S	1.00	EA	1.00	EA	0.310	0.024	\$0.68	0.310	0.024	\$0.68	0.000	0.000	\$0.00
Decrease	6505012040681	ETOMIDATE INJECTION 20ml SYRINGE-NEEDLE UNIT	0.80	EA	2.00	EA	0.108	0.001	\$1.28	0.270	0.003	\$3.19	-0.162	-0.002	-\$1.91
Increase	6505010104170	FENTANYL CITRATE INJ USP .05mg EQUIV INTRAVEN	3.00	PG	1.00	PG	0.057	0.003	\$1.10	0.019	0.001	\$0.37	0.038	0.002	\$0.73
Decrease	6505013548591	FLUMAZENIL INJECTION 0.1mg/ml 10ml VIAL 10 VI	1.00	VI	2.00	VI	0.110	0.002	\$3.06	0.220	0.003	\$6.11	-0.110	-0.002	-\$3.06

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Same	6505012594297	FUROSEMIDE INJECTION USP 10mg/ml 10ml AMPUL 2	3.00	AM	3.00	AM	0.252	0.002	\$0.31	0.252	0.002	\$0.31	0.000	0.000	\$0.00
Decrease	6505012139514	GENTAMICIN INJECTION 40mg/ml 2ml VI 25S	9.00	VI	10.00	VI	0.238	0.007	\$0.10	0.264	0.008	\$0.11	-0.026	-0.001	-\$0.01
Decrease	6505014667505	GLUCAGON FOR INJECTION USP 1 mg UNIT FOR EMER	1.00	EA	2.00	EA	0.550	0.015	\$44.13	1.100	0.030	\$88.26	-0.550	-0.015	-\$44.13
Decrease	6505002688530	HALOPERIDOL INJ USP 5mg/ml 1ml AMPUL 10S	1.00	AM	5.00	AM	0.013	0.002	\$0.05	0.065	0.008	\$0.25	-0.052	-0.006	-\$0.20
Increase	6505013667518	HEPARIN SODIUM INJECTION USP 20000 UNITS/ml 1	7.00	VI	2.00	VI	0.434	0.005	\$0.27	0.124	0.001	\$0.08	0.310	0.004	\$0.19
Decrease	6505012561948	IPRATROPIUM BROMIDE INHALATION AEROSOL 14gm V	1.00	PG	3.00	PG	0.100	0.005	\$37.80	0.300	0.015	\$113.40	-0.200	-0.010	-\$75.60
Increase	6505015126129	KETOROLAC TROMETHAM 30mg/ml 1ml VI 10S	12.00	VI	5.00	VI	0.660	0.144	\$27.10	0.275	0.060	\$11.29	0.385	0.084	\$15.81
Decrease	6505012447982	LABETALOL HCL INJ 5mg/ml 20ml VIAL	1.65	VI	2.00	VI	0.010	0.000	\$0.80	0.012	0.000	\$0.97	-0.002	0.000	-\$0.17
Increase	6505014448357	LEVOFLOXACIN IN DEXTROSE INJECTION 5mg/ml 100	10.00	BG	6.00	BG	0.229	0.050	\$263.55	0.138	0.030	\$158.13	0.092	0.020	\$105.42
Increase	6505011947265	LIDOCAINE HCL 0.4% & D5W INJ 500ml BAG 18S	5.25	EA	2.00	EA	7.146	0.254	\$2.11	2.722	0.097	\$0.80	4.424	0.157	\$1.31
Decrease	6505001394512	LIDOCAINE HYDROCHLORIDE INJ USP 2% 5ml BT 10/	0.75	EA	6.00	EA	0.105	0.005	\$0.73	0.840	0.036	\$5.86	-0.735	-0.032	-\$5.13
Decrease	6505014478094	LIDOCAINE HYDROCHLORIDE INJECTION USP 50ml VI	1.00	VI	2.00	VI	0.011	0.002	\$0.01	0.022	0.005	\$0.02	-0.011	-0.002	-\$0.01
Same	6505005843131	LIDOCAINE HYDROCHLORIDE JELLY USP 2% 30ml	1.00	PG	1.00	PG	0.005	0.000	\$0.25	0.005	0.000	\$0.25	0.000	0.000	\$0.00
Same	6505001507622	LUBRICANT OPHTHALMIC TOPICAL .125oz OR 3.5gm	1.00	TU	1.00	TU	0.250	0.025	\$22.00	0.250	0.025	\$22.00	0.000	0.000	\$0.00
Decrease	6505001117829	LUBRICANT SURGICAL 5 gm	3.08	EA	34.00	EA	0.056	0.002	\$0.00	0.614	0.019	\$0.01	-0.559	-0.018	-\$0.01
Decrease	6505014975663	MAGNESIUM SULFATE INJ .5g/ml 2ml VIAL 25S	3.50	EA	5.00	EA	0.189	0.022	\$0.07	0.270	0.032	\$0.10	-0.081	-0.010	-\$0.03

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6505011253253	MANNITOL INJECTION 25% 250mg/ml 50ml VIAL 25S	2.00	VI	4.00	VI	0.540	0.015	\$0.08	1.080	0.029	\$0.17	-0.540	-0.015	-\$0.08
Decrease	6505015054693	MEPERIDINE HCL INJ 100mg/ml 1ml CART 10S	0.80	PG	1.00	PG	0.044	0.010	\$0.56	0.055	0.012	\$0.70	-0.011	-0.002	-\$0.14
Increase	6505014829224	METHYLPREDNISOLONE INJ 500 mg 4ml VI 25S	4.20	EA	2.00	EA	0.092	0.003	\$1.18	0.044	0.001	\$0.56	0.048	0.001	\$0.62
Increase	6505012683738	METOCLOPRAMIDE INJECTION USP 5mg/ml 2ml VIAL	10.00	VI	4.00	VI	0.013	0.000	\$0.28	0.005	0.000	\$0.11	0.008	0.000	\$0.17
Decrease	6505013092742	METOPROLOL TARTRATE INJ 1mg/ml 5ml AMPS 12S	2.00	AM	5.00	AM	0.018	0.000	\$0.15	0.046	0.001	\$0.37	-0.028	-0.001	-\$0.22
Decrease	6505012444736	MIDAZOLAM HCL INJ 5mg/ml 1ml VIAL 10S	0.40	PG	1.00	PG	0.001	0.000	\$0.50	0.004	0.000	\$1.26	-0.002	0.000	-\$0.76
Increase	6505014830274	MORPHINE SULFATE INJECTION USP 10mg/ml 1ml VI	2.00	PG	1.00	PG	0.001	0.002	\$0.17	0.000	0.001	\$0.09	0.000	0.001	\$0.09
Decrease	6505011796051	NALOXONE HYDROCHLORIDE INJ USP .400mg/ml 10ml	0.70	VI	2.00	VI	0.560	0.014	\$27.67	1.600	0.040	\$79.06	-1.040	-0.026	-\$51.39
Increase	6505013541044	NITROGLYCERIN INJECTION USP 50mg 10ml VIAL 25	3.50	EA	2.00	EA	0.357	0.002	\$0.15	0.204	0.001	\$0.08	0.153	0.001	\$0.06
Same	6505014860542	NITROGLYCERIN LINGUAL AEROSOL 0.4mg 200 SPRAY	1.00	EA	1.00	EA	0.003	0.001	\$0.21	0.003	0.001	\$0.21	0.000	0.000	\$0.00
Increase	6505002999496	NOREPINEPHRINE BITARTRATE INJECTION USP 4ml A	8.00	AM	4.00	AM	0.070	0.004	\$1.01	0.035	0.002	\$0.50	0.035	0.002	\$0.50
Decrease	6505008694177	OXYMETAZOLINE HCL NASAL SOL .05% 15ml BT 1S	1.00	BT	2.00	BT	0.100	0.006	\$4.16	0.200	0.012	\$8.32	-0.100	-0.006	-\$4.16
Increase	6505001049320	PHENYLEPHRINE HYDROCHLORIDEI INJ 1% 1ml 25S	12.00	AM	8.00	AM	0.202	0.013	\$0.23	0.134	0.009	\$0.15	0.067	0.004	\$0.08
Decrease	6505014375560	PHENYTOIN SODIUM INJECTION USP 50mg/ml 2ml VI	8.80	VI	10.00	VI	0.546	0.002	\$0.05	0.620	0.002	\$0.06	-0.074	0.000	-\$0.01

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6505013845767	PIPERACILLIN SODIUM & TAZOBACTAM - INJECT	14.00	VI	6.00	VI	1.190	0.017	\$17.47	0.510	0.007	\$7.49	0.680	0.010	\$9.98
Decrease	6505010801987	POTASSIUM CHLORIDE CONCENTRATE - INJECT	2.00	VI	4.00	VI	0.220	0.007	\$0.02	0.440	0.014	\$0.04	-0.220	-0.007	-\$0.02
Decrease	6505009143593	POVIDONE-IODINE TOPICAL 10% .5FL oz 50S	8.00	BT	16.00	BT	0.440	0.017	\$0.14	0.880	0.035	\$0.28	-0.440	-0.017	-\$0.14
Increase	6505012408703	PROCAINAMIDE HYDROCHLORIDE INJECTION USP 100m	8.13	VI	3.00	VI	0.699	0.004	\$0.32	0.258	0.001	\$0.12	0.441	0.002	\$0.20
Increase	6505006807352	PROMETHAZINE HCL INJ 25mg/ml 1m AMP 25S	15.00	AM	5.00	AM	0.186	0.011	\$0.23	0.062	0.004	\$0.08	0.124	0.008	\$0.16
Decrease	6505014965229	PROPOFOL INJ 10mg/ml 20 ml SINGLE DOSE VI 50S	2.00	VI	6.00	VI	0.018	0.000	\$0.35	0.054	0.001	\$1.04	-0.036	0.000	-\$0.69
Decrease	6505014348622	PROPOFOL INJECTION 10mg/ml 50ml VIAL 20 VIALS	2.00	VI	6.00	VI	0.062	0.000	\$0.86	0.186	0.001	\$2.59	-0.124	-0.001	-\$1.73
Increase	6505015138441	RACEpinephrine INHALATION SOL 0.5ml VI 30S	6.00	VI	2.00	VI	0.110	0.024	\$0.28	0.037	0.008	\$0.09	0.073	0.016	\$0.19
Increase	6505012085955	RANITIDINE INJ 25mg/ml 2ml SINGLE DOSE 10S	12.00	EA	10.00	EA	0.247	0.024	\$1.31	0.206	0.020	\$1.09	0.041	0.004	\$0.22
Decrease	6505013306267	RINGER'S INJECTION LACTATED 1000ml BAG 12S	3.00	EA	7.00	EA	1.638	0.029	\$0.13	3.821	0.067	\$0.31	-2.183	-0.038	-\$0.18
Decrease	6505001394561	SODIUM BICARBONATE INJ USP 50ml BT 10/PG	0.75	BT	2.00	BT	0.330	0.023	\$0.13	0.880	0.060	\$0.34	-0.550	-0.038	-\$0.22
Increase	6505010270180	SODIUM CHLORIDE INHALATION SOLUTION USP 3ml V	60.00	EA	40.00	EA	0.150	0.033	\$0.09	0.100	0.022	\$0.06	0.050	0.011	\$0.03
Decrease	6505013306269	SODIUM CHLORIDE INJ 0.9% 1000ml BAG 12S	5.00	EA	6.00	EA	0.003	0.000	\$0.00	0.004	0.000	\$0.00	-0.001	0.000	\$0.00
Increase	6505013308924	SODIUM CHLORIDE INJECTION USP 0.9% 100ml BAG	20.00	EA	10.00	EA	0.656	0.027	\$0.15	0.328	0.013	\$0.07	0.328	0.013	\$0.07
Decrease	6505012870626	SODIUM CHLORIDE INJECTION USP 0.900% 10ml VIAL	11.35	VI	30.00	VI	0.749	0.007	\$0.13	1.980	0.019	\$0.34	-1.231	-0.012	-\$0.21

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6505013318945	SODIUM CHLORIDE INJECTION USP 0.900% W/V SOD	20.00	EA	8.00	EA	0.250	0.001	\$0.89	0.100	0.000	\$0.36	0.150	0.001	\$0.54
Increase	6505013723425	SODIUM CHLORIDE INJECTION USP 500ml BAG 24 BA	12.30	BG	5.00	BG	3.459	0.059	\$0.29	1.406	0.024	\$0.12	2.053	0.035	\$0.17
Increase	6505010095019	SODIUM NITROPRUSSIDE STERILE USP 50mg	3.00	BT	2.00	BT	0.240	0.012	\$16.47	0.160	0.008	\$10.98	0.080	0.004	\$5.49
Decrease	6505014171254	SUCCINYLCHOLINE INJ 20mg/ml 10ml VIAL 25S	2.00	VI	4.00	VI	0.001	0.000	\$0.00	0.001	0.000	\$0.00	-0.001	0.000	\$0.00
Increase	6505012478801	VANCOMYCIN HYDROCHLORIDE 1gm VIAL 10S	18.00	VI	4.00	VI	1.026	0.052	\$10.98	0.228	0.012	\$2.44	0.798	0.041	\$8.54
Increase	6505006848625	VASOPRESSIN INJ USP 1ml VIAL 10/PG	7.00	VI	6.00	VI	0.084	0.070	\$3.02	0.072	0.060	\$2.59	0.012	0.010	\$0.43
Same	6505012580983	VECURONIUM BROMIDE INJ 10mg/ml 10ml VI 10S	5.00	VI	5.00	VI	0.002	0.000	\$0.07	0.002	0.000	\$0.07	0.000	0.000	\$0.00
Decrease	6505012870627	WATER FOR INJECTION STERILE USP 10ml SINGLE DOSE	0.03	VI	16.00	VI	0.002	0.000	\$0.00	0.864	0.010	\$0.15	-0.862	-0.010	-\$0.15
		MEDICATION TOTALS					46.488	6.513	\$984.76	34.073	2.466	\$1,013.90	12.416	4.048	-\$29.14
Decrease	6515014468319	ADAPTER CO ₂ AIRWAY PATIENT VITAL SIGNS MONITO	5.65	EA	9.00	EA	0.283	0.057	\$8.14	0.450	0.090	\$12.97	-0.168	-0.034	-\$4.83
Decrease	6515013349484	ADAPTER CONNECTING VENTILATOR MULTI 15mm ID 2	5.00	EA	6.00	EA	0.095	0.010	\$0.06	0.114	0.012	\$0.07	-0.019	-0.002	-\$0.01
Decrease	6515013510554	ADAPTER INJ-ASPR SITE ONE-WAY STR STYLE LOCK	3.00	EA	20.00	EA	0.045	0.007	\$0.01	0.300	0.047	\$0.05	-0.255	-0.040	-\$0.05
Decrease	6515010701497	ADAPTER INJECTION SITE SODIUM LOCK	6.00	EA	10.00	EA	0.090	0.014	\$0.01	0.150	0.024	\$0.02	-0.060	-0.009	-\$0.01
Increase	6515014806611	ADAPTER O ₂ FEMALE OXYGEN DISS HEX ADAPTER	12.00	EA	4.00	EA	1.200	1.200	\$105.00	0.400	0.400	\$35.00	0.800	0.800	\$70.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6515014806610	ADAPTER O ₂ MALE CHEMETRON DISS W/CHECK VALVE	12.00	EA	4.00	EA	1.200	1.200	\$252.00	0.400	0.400	\$84.00	0.800	0.800	\$168.00
Increase	6515013702217	ADAPTER OXYGEN FLOW METER TO TUBING FITS STD	12.00	EA	6.00	EA	0.084	0.010	\$0.10	0.042	0.005	\$0.05	0.042	0.005	\$0.05
Increase	6515014472029	ADAPTER OXYGEN FLOW METER TO TUBING PLAS DISP	12.00	EA	4.00	EA	0.072	0.720	\$0.54	0.024	0.240	\$0.18	0.048	0.480	\$0.36
Increase	6515015182813	ADAPTER PRESSURE LINE VENTILATOR 50S	12.00	EA	5.00	EA	0.372	0.053	\$0.16	0.155	0.022	\$0.07	0.217	0.031	\$0.09
Decrease	6515011864837	ADAPTER TRACHEOSTOMY CANNULA T-TYPE W/O CAP 1	2.00	EA	6.00	EA	0.040	0.006	\$0.01	0.120	0.018	\$0.04	-0.080	-0.012	-\$0.02
Decrease	6515014443414	ADAPTER-CONNECTOR CIRCUIT VENTILATION CLEAR U	5.00	EA	6.00	EA	0.050	0.070	\$0.07	0.060	0.084	\$0.08	-0.010	-0.014	-\$0.01
Decrease	6510010959286	ADHESIVE TAPE SURG PLAS VINYLIDENE CHLORIDE W	4.00	RO	5.00	RO	1.040	0.089	\$13.88	1.300	0.112	\$17.35	-0.260	-0.022	-\$3.47
Decrease	6515014502045	ADMINISTRTN SET INFUS PUMP U/W MEDSYS III	10.00	EA	20.00	EA	0.600	0.200	\$2.36	1.200	0.400	\$4.71	-0.600	-0.200	-\$2.36
Decrease	6515014502021	ADMINISTRATION SET INFUSION PUMP 20S	3.00	SE	12.00	SE	0.450	0.150	\$1.71	1.800	0.600	\$6.83	-1.350	-0.450	-\$5.12
Decrease	6515012331920	AIRWAY NASOPHARYNGEAL 8mm OD SMOOTH EDGES 10S	1.00	EA	2.00	EA	0.025	0.007	\$0.38	0.050	0.014	\$0.77	-0.025	-0.007	-\$0.38
Same	6515012331917	AIRWAY NASOPHARYNGEAL 9mm ID 12mm OD KINK RES	2.00	EA	2.00	EA	0.050	0.014	\$0.86	0.050	0.014	\$0.86	0.000	0.000	\$0.00
Decrease	6515012331918	AIRWAY NASO PHARYNGEAL PORTEX 8mm ID 10.5mm OD	1.00	EA	2.00	EA	0.025	0.007	\$0.76	0.050	0.014	\$1.52	-0.025	-0.007	-\$0.76
Same	6515012331919	AIRWAY NASO PHARYNGEAL PORTEX DSGN PLAS 7mm ID	2.00	PG	2.00	EA	0.050	0.014	\$0.90	0.050	0.014	\$0.90	0.000	0.000	\$0.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6515013046511	AIRWAY PHARYNGEAL GUEDEL DESIGN OPAQUE FLEXIB	1.00	EA	2.00	EA	0.014	0.002	\$0.04	0.029	0.004	\$0.08	-0.014	-0.002	-\$0.04
Decrease	6515012331913	AIRWAY PHARYNGEAL GUEDEL DSGN SZ 4 MED/LGE AD	1.00	EA	2.00	EA	0.050	0.050	\$0.04	0.100	0.100	\$0.07	-0.050	-0.050	-\$0.04
Same	6515013088949	AIRWAY PHARYNGEAL GUEDEL SZ 5 LARGE ADULT 100	2.00	EA	2.00	EA	0.094	0.094	\$0.02	0.094	0.094	\$0.02	0.000	0.000	\$0.00
Increase	6515009051473	APPLICATOR PLASTIC/WOOD ROD 6" LG 2000S	48.00	EA	5.00	EA	0.016	0.016	\$0.00	0.002	0.002	\$0.00	0.014	0.014	\$0.00
Decrease	6530010592473	BAG URINE COLLECTION PLASTIC DISPOSABLE 21	2.00	EA	4.00	EA	1.100	0.158	\$0.22	2.200	0.316	\$0.45	-1.100	-0.158	-\$0.22
New Item	6515015238467	BAGS DRAINAGE ICP (PART #82-1732)	2.00	EA	0.00	EA	0.220	0.680	\$83.28	0.000	0.000	0.000	0.220	0.680	\$83.28
Increase	6510012322021	BANDAGE ADHESIVE PLAST COAT CLEAR 5x4"	12.00	EA	10.00	EA	0.192	0.000	\$0.36	0.160	0.000	\$0.30	0.032	0.000	\$0.06
Same	6510000583047	BANDAGE GAUZE KERLIX 4.5" x 4YDS 100S	16.00	RL	16.00	RO	0.184	0.004	\$0.16	0.184	0.004	\$0.16	0.000	0.000	\$0.00
Decrease	6510002011755	BANDAGE MUSLIN CAMOFLGE 37x37x52" 1S	1.00	EA	2.00	EA	0.130	0.008	\$2.05	0.260	0.016	\$4.10	-0.130	-0.008	-\$2.05
Decrease	6515014764452	BLADE LARYNG MACINTOCH 105mm O/A LG DIS 20s	2.00	EA	3.00	EA	0.000	0.000	\$0.22	0.001	0.000	\$0.33	0.000	0.000	-\$0.11
Decrease	6515014764446	BLADE LARYNG MACINTOCH 138mm O/A LG DIS 20s	2.00	EA	3.00	EA	0.000	0.000	\$0.22	0.000	0.000	\$0.33	0.000	0.000	-\$0.11
Decrease	6515014764449	BLADE LARYNG MILLER 130mm O/A LG DISP 20s	2.00	EA	3.00	EA	0.000	0.000	\$0.22	0.000	0.000	\$0.33	0.000	0.000	-\$0.11
Decrease	6515012680377	BLADE LARYNGOSCOPE BAUMAN DSGN LGE ADL 6" LG	2.00	EA	3.00	EA	0.020	0.006	\$0.24	0.030	0.009	\$0.35	-0.010	-0.003	-\$0.12
Increase	7210009356666	BLANKET CASUALTY PLAST FILM & ALUM 95x56"	6.00	EA	3.00	EA	0.960	0.060	\$24.54	0.480	0.030	\$12.27	0.480	0.030	\$12.27
Decrease	6515014811678	BLOOD SAMPLE GAS LYTE REDUCED HEPARIN 100S	5.00	EA	26.00	EA	0.010	0.014	\$0.03	0.052	0.073	\$0.16	-0.042	-0.059	-\$0.13

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6515015178085	CANISTER SUCTION SURG 1200ml PLAS DISP 12S	4.00	EA	6.00	EA	0.433	0.167	\$1.27	0.650	0.250	\$1.91	-0.217	-0.083	-\$0.64
Same	6515010747812	CANNULA LARYN YANKAUER W/O CONT VENT 50S	4.00	EA	4.00	EA	0.440	0.072	\$0.06	0.440	0.072	\$0.06	0.000	0.000	\$0.00
Decrease	6515014580522	CANNULA NASAL O ₂ 84" OVER EAR NON-FLARED 50S	6.00	EA	10.00	EA	0.012	0.014	\$0.07	0.020	0.024	\$0.11	-0.008	-0.010	-\$0.05
Decrease	6515013811684	CANNULA NEEDLELESS ACCESS SYS IV W/LUER-LOCK	10.00	EA	60.00	EA	0.034	0.004	\$0.00	0.204	0.024	\$0.01	-0.170	-0.020	-\$0.01
Decrease	6515014236567	CANNULA NEEDLELESS ACCESS SYSTEM IV PLAST	10.00	EA	40.00	EA	0.020	0.005	\$0.00	0.080	0.020	\$0.01	-0.060	-0.015	-\$0.01
Same	6532000048055	CAP OPERATING SURGICAL UNIV SZ RAYON 100S	9.00	EA	9.00	EA	0.001	0.000	\$0.02	0.001	0.000	\$0.02	0.000	0.000	\$0.00
Decrease	6515014774044	CATH SUC MAXI-FLO LOOPED, GLOVES & BASIN 100S	4.00	EA	7.00	EA	0.006	0.000	\$0.06	0.011	0.000	\$0.10	-0.005	0.000	-\$0.04
Decrease	6515010691651	CATHETER & NDL UNIT D12 IV 20GAX1.75" 20GA ND	6.00	EA	20.00	EA	0.021	0.002	\$0.02	0.069	0.007	\$0.08	-0.048	-0.005	-\$0.05
Decrease	6515013405429	CATHETER & NEEDLE UNIT IV 14GA BEVELED TIP RA	6.00	EA	16.00	EA	0.120	0.012	\$0.06	0.320	0.032	\$0.16	-0.200	-0.020	-\$0.10
Decrease	6515013365874	CATHETER & NEEDLE UNIT IV 16GAX1.25" 200S	6.00	EA	16.00	EA	0.120	0.012	\$0.06	0.320	0.032	\$0.16	-0.200	-0.020	-\$0.10
Decrease	6515013373681	CATHETER & NEEDLE UNIT IV 18GAX1.25" 200S	8.00	EA	16.00	EA	0.040	0.016	\$0.09	0.080	0.032	\$0.18	-0.040	-0.016	-\$0.09
Decrease	6515013909650	CATHETER & NEEDLE UNIT IV 20GAX1.25" 200S	4.00	EA	10.00	EA	0.462	0.003	\$0.05	1.155	0.007	\$0.12	-0.693	-0.004	-\$0.07
Increase	6515014478983	CATHETER AIRWAY EXCHANGE	4.00	EA	1.00	EA	0.600	0.400	\$132.00	0.150	0.100	\$33.00	0.450	0.300	\$99.00
Decrease	6515013174941	CATHETER CARDIOVASCULAR POLYETHYLENE TROCAR	1.00	EA	2.00	EA	0.040	0.010	\$0.33	0.080	0.020	\$0.67	-0.040	-0.010	-\$0.33
Same	6515014222346	CATHETER TRACHEAL 3.4mm BLUNT TIP DISPOSABLE	2.00	EA	2.00	EA	0.200	0.220	\$65.00	0.200	0.220	\$65.00	0.000	0.000	\$0.00
Decrease	6515010983623	CATHETER URETHRAL FOLEY 14FR RD TIP RUBBER AD	2.00	EA	4.00	EA	0.667	0.126	\$1.67	1.333	0.251	\$3.34	-0.667	-0.126	-\$1.67

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6515010988356	CATHETER URETHRAL FOLEY 18FR ADL SZ 5CC BALLO	2.00	EA	4.00	EA	0.667	0.126	\$0.29	1.333	0.251	\$0.58	-0.667	-0.126	-\$0.29
Decrease	6515011660154	CATHETERIZATION KIT CARDIO 20GAX1.75" RADPQ T	2.00	EA	10.00	EA	0.055	0.004	\$0.32	0.276	0.021	\$1.61	-0.221	-0.017	-\$1.29
Decrease	6515014447650	CATHETERIZATION KIT CARDIOVASCULAR 15 COMPONE	1.00	KT	2.00	KT	0.060	0.060	\$14.60	0.120	0.120	\$29.20	-0.060	-0.060	-\$14.60
Decrease	6515013108335	CATHETERIZATION KIT PNEUMOTHORAX 9FR CATH 29C	1.00	EA	3.00	EA	0.250	0.012	\$85.64	0.750	0.036	\$256.92	-0.500	-0.024	-\$171.28
Same	6515001490105	CATHETERIZATION KIT URETHRAL W/BOT-OUTLET DRA	1.00	EA	1.00	EA	0.670	0.150	\$6.56	0.670	0.150	\$6.56	0.000	0.000	\$0.00
Decrease	6515012503414	CATHETERIZATION SET	1.00	SE	2.00	SE	0.190	0.001	\$1.70	0.380	0.002	\$3.40	-0.190	-0.001	-\$1.70
Same	6515013385410	CHAMBER MEDICATION PLAS BOT ENDS & PLAS CHAMB	3.00	EA	3.00	EA	0.075	0.048	\$0.20	0.075	0.048	\$0.20	0.000	0.000	\$0.00
Decrease	6515013633787	CONNECTOR INHALANT MASK ELBOW DRUG DELIVERY S	8.00	EA	10.00	EA	2.000	0.016	\$295.12	2.500	0.020	\$368.90	-0.500	-0.004	-\$73.78
Increase	6515014584374	CONNECTOR SURG O ₂ FLEX KRATON MATERIAL 50S	12.00	EA	6.00	EA	0.132	0.029	\$0.83	0.066	0.014	\$0.42	0.066	0.014	\$0.42
Same	6515014779738	CONNECTOR TUBE O ₂ STRGHT PLSTC DIS/NONSTE 50S	12.00	EA	12.00	EA	0.000	0.001	\$0.09	0.000	0.001	\$0.09	0.000	0.000	\$0.00
Decrease	6515009269201	CONNECTOR TUBING STRAIGHT 50S	12.00	EA	39.00	EA	0.156	0.014	\$0.06	0.507	0.047	\$0.20	-0.351	-0.032	-\$0.14
Increase	6550014323696	CONTROL BLOOD CHEM USE W/G E3+ G3+ EC4+ 6+ EG	16.00	EA	10.00	EA	3.200	0.040	\$3.14	2.000	0.025	\$1.96	1.200	0.015	\$1.18
Increase	6550014318279	CONTROL BLOOD CHEM1.7ML USE W/G E3+ G3+ EC4+	16.00	EA	10.00	EA	3.200	0.040	\$2.11	2.000	0.025	\$1.32	1.200	0.015	\$0.79
Same	6515013576436	CRICOHYROTOMY SET STREILE INDIVIDUAL PEEL OP	1.00	EA	1.00	EA	3.000	0.500	\$80.70	3.000	0.500	\$80.70	0.000	0.000	\$0.00

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6515003245500	DEPRESSOR TONGUE WOOD 6x.75" STR 100S	20.00	EA	5.00	EA	0.138	0.007	\$0.00	0.035	0.002	\$0.00	0.104	0.005	\$0.00
Decrease	6515011900880	DRAIN SURG THORACIC C9 STRAIGHT 24FR BEVEL NO	1.00	EA	6.00	EA	0.009	0.001	\$0.97	0.054	0.005	\$5.83	-0.045	-0.005	-\$4.86
New Item	6515015238459	DRAINANGE SYS ICP W/EVD CATHETER EDS 3 CSF	2.00	EA	0.00	EA	3.700	5.000	\$416.44	0.000	0.000	\$0.00	3.700	5.000	\$416.44
Decrease	6515014514688	DRAINAGE UNIT PLEURAL CAVITY	1.00	EA	2.00	EA	1.000	0.500	\$17.50	2.000	1.000	\$35.00	-1.000	-0.500	-\$17.50
Decrease	6515013486060	DRAINAGE UNIT PLEURAL CAVITY MULTICHAMBER W/D	1.00	EA	2.00	EA	0.250	0.028	\$8.30	0.500	0.056	\$16.59	-0.250	-0.028	-\$8.30
Decrease	6510012104453	DRESSING OCCLUSIVE ADHESIVE W/HYPOREACTIVE ADH	10.00	EA	35.00	EA	0.007	0.000	\$0.01	0.025	0.001	\$0.02	-0.018	-0.001	-\$0.02
Same	6515011534971	ELECTRODE JELLY EKG CLEAR SALT FREE 8 oz 12S	2.00	EA	2.00	EA	0.077	0.002	\$0.55	0.077	0.002	\$0.55	0.000	0.000	\$0.00
Increase	6515015092920	ELECTRODE SET ECG 12-LEADS 6S	12.00	PO	1.00	PO	0.380	0.240	\$32.00	0.032	0.020	\$2.67	0.348	0.220	\$29.33
Decrease	6515015099417	FILTER MEDIA SUCTION CANNISTER 10S	4.00	EA	6.00	EA	0.800	0.440	\$2.86	1.200	0.660	\$4.28	-0.400	-0.220	-\$1.43
Decrease	6515NCM041120	FILTER VENTILATOR INFECTION CONTROL 12S	10.00	CS	12.00	CS	0.000	0.000	\$7.93	0.000	0.000	\$9.52	0.000	0.000	-\$1.59
Increase	6515013598565	GLOVE PATIENT EXAM/TREAT SM AMBIDEXTROUS PWDR	240.00	EA	184.00	EA	0.720	0.036	\$0.02	0.552	0.028	\$0.02	0.168	0.008	\$0.01
Increase	6515014544784	GLOVE PT EXAM & TX AMBID LATEX SZ LGE 100S	240.00	EA	184.00	EA	0.456	0.480	\$0.17	0.350	0.368	\$0.13	0.106	0.112	\$0.04
Decrease	6515011498841	GLOVES SURG GEN SURG SZ 7.5 PWDR-FREE 50PR	6.00	PR	14.00	PR	0.547	0.057	\$0.03	1.277	0.133	\$0.06	-0.730	-0.076	-\$0.04
Decrease	6515011498842	GLOVES SURG GEN SURG SZ 8 RUBBER 50PR	6.00	PR	12.00	PR	0.547	0.057	\$0.03	1.094	0.114	\$0.05	-0.547	-0.057	-\$0.03
Decrease	6515015077811	GUIDE WIRE VEIN CATH 12" x .25" STER 25S	3.00	EA	10.00	EA	0.014	0.012	\$0.98	0.048	0.040	\$3.27	-0.034	-0.028	-\$2.29
Decrease	6515014770878	HEAT AND MOIST EXCHNGR 2-PART HUMID-VENT 20S	5.00	EA	12.00	EA	0.035	0.170	\$0.69	0.084	0.408	\$1.65	-0.049	-0.238	-\$0.96

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Same	6515012656304	INHALATOR SINGLE W/FLOWSIGNAL AEROSOL 1.50" D	3.00	EA	3.00	EA	0.060	0.057	\$0.36	0.060	0.057	\$0.36	0.000	0.000	\$0.00
Decrease	6515014164032	INTRAVENOUS INJ SE 20DROP/ml STER DISP U/W PU	7.00	EA	10.00	EA	0.245	0.035	\$10.50	0.350	0.050	\$15.01	-0.105	-0.015	-\$4.50
Decrease	6515013139633	KNIFE GENERAL SURGICAL 1.75" BLADE LG SIZE 11	2.00	EA	12.00	EA	0.050	0.040	\$1.31	0.300	0.240	\$7.87	-0.250	-0.200	-\$6.56
Decrease	7690009354118	LABEL PAPER PSA A2 RECTANGULAR 1.5" L x 2.5I	20.00	EA	50.00	EA	0.025	0.000	\$0.00	0.063	0.000	\$0.00	-0.038	0.000	\$0.00
Increase	6532013563943	MASK FACE ASEPTIC EAR LOOP DISPOSABLE F/INFEC	36.00	EA	24.00	EA	1.512	0.003	\$0.24	1.008	0.002	\$0.16	0.504	0.001	\$0.08
Increase	6515014469890	MASK ORONASAL ADULT PVC PLAS NON-BREATHING PV	10.70	EA	4.00	EA	1.070	0.428	\$0.24	0.400	0.160	\$0.09	0.670	0.268	\$0.15
Increase	6515012627415	MASK ORONASAL AEROSOL THERAPY ADULT FEMALE PL	6.00	EA	2.00	EA	0.180	0.019	\$0.06	0.060	0.006	\$0.02	0.120	0.013	\$0.04
Same	6515014469577	MASK ORONASAL AIRLIFE ADULT DISP 50S	3.00	EA	3.00	EA	0.024	0.024	\$0.09	0.024	0.024	\$0.09	0.000	0.000	\$0.00
Same	6515008886122	MASK ORONASAL SEMI-RIGID TRANSLUCENT 50S	4.00	EA	4.00	EA	0.440	0.120	\$0.07	0.440	0.120	\$0.07	0.000	0.000	\$0.00
Decrease	6515014072821	MONITOR SET VASCULAR PRES VENOUS ART BLD 10S	12.00	EA	16.00	EA	14.400	3.360	\$180.00	19.200	4.480	\$240.00	-4.800	-1.120	-\$60.00
Decrease	6515012689321	NEBULIZER MEDICINAL COMPRESSED AIR LINE PLAST	3.00	EA	6.00	EA	0.540	0.138	\$0.06	1.080	0.276	\$0.12	-0.540	-0.138	-\$0.06
Increase	6515011141101	NEEDLE FILTER 19GA 1.50"LG THINWALL LUER LOCK	35.00	EA	25.00	EA	0.000	0.000	\$0.01	0.000	0.000	\$0.01	0.000	0.000	\$0.00
Decrease	6515007542834	NEEDLE HYPO GP 18GA 1.5"LG LUER LOCK 100S	35.00	EA	55.00	EA	0.231	0.015	\$0.02	0.363	0.024	\$0.04	-0.132	-0.009	-\$0.01
Decrease	6515007542838	NEEDLE HYPOD21GA 1.1" LG LUER LOCK 100S	15.00	EA	30.00	EA	0.114	0.007	\$0.01	0.228	0.013	\$0.02	-0.114	-0.007	-\$0.01
Decrease	6515013101813	NEEDLE INFUSION INTRAOSSSEOUS 18GA 4cm LG 45 D	1.00	EA	2.00	EA	0.010	0.001	\$25.80	0.020	0.002	\$51.60	-0.010	-0.001	-\$25.80

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6530013667671	PAD BED LINEN NONWOVEN PLASTIC POLYPROPYLENE	20.00	EA	45.00	EA	2.933	0.453	\$0.07	6.600	1.020	\$0.15	-3.667	-0.567	-\$0.08
Decrease	6515013704674	PAD ELECTRODE DEFIBRILLATOR 4.50x4.50" PRE-GE	1.00	EA	3.00	EA	0.116	0.008	\$0.03	0.348	0.023	\$0.10	-0.232	-0.015	-\$0.07
Decrease	6510010100307	PAD POVIDONE-IODINE IMPREG 1x2" BROWN 100S	25.00	EA	42.00	EA	0.170	0.011	\$0.01	0.286	0.019	\$0.02	-0.116	-0.008	-\$0.01
Decrease	6510007863736	PAD PREP ISOPROPYL ALCOHOL IMPREG 1x2.5" 100	100.00	EA	130.00	EA	0.500	0.100	\$0.01	0.650	0.130	\$0.01	-0.150	-0.030	\$0.00
Decrease	6515014430565	PADS ELECTRODE DEFIB ADULT ZOLL 1S	3.00	PR	8.00	PR	1.650	0.360	\$150.00	4.400	0.960	\$400.00	-2.750	-0.600	-\$250.00
Same	6515014128673	PAPER PRINTER PROPAQ 104 & 106 VITAL SIGNS MO	3.00	RO	3.00	RO	0.900	0.120	\$1.24	0.900	0.120	\$1.24	0.000	0.000	\$0.00
Same	6515015185984	PAPER RECORDER U/W DEFIBRILLATOR	1.00	RO	1.00	RO	0.120	0.120	\$3.00	0.120	0.120	\$3.00	0.000	0.000	\$0.00
Decrease	6640014195698	PAPER RECORDING CLINICAL ANALYZER USE W/HEWLE	1.00	RO	2.00	RO	0.167	0.004	\$0.43	0.333	0.008	\$0.86	-0.167	-0.004	-\$0.43
Decrease	6515013667537	PROBE TEMPERATURE MONITORING ESOPHAGEAL 19"LG	5.00	EA	6.00	EA	0.188	0.125	\$2.33	0.225	0.150	\$2.80	-0.038	-0.025	-\$0.47
Decrease	6515012627222	PUNCTURE KIT JUGULAR VEIN 20GAX5"CATH 22GAX1.	1.00	EA	2.00	EA	0.010	0.001	\$1.74	0.020	0.001	\$3.48	-0.010	-0.001	-\$1.74
Decrease	6515014764542	RESUSCITATOR KT HND OP RESER & MSK ADLT 10S	2.00	EA	6.00	EA	0.360	0.036	\$4.09	1.080	0.108	\$12.27	-0.720	-0.072	-\$8.18
Decrease	6520013849297	SALIVA EJECTOR DENTAL PLAST DISP 1000S	2.00	EA	4.00	EA	0.021	0.001	\$0.00	0.042	0.002	\$0.00	-0.021	-0.001	\$0.00
Decrease	6515013050571	SENSOR OXYGEN MONITORING F/USE ON FOOT NEONAT	2.00	EA	24.00	EA	0.013	0.000	\$1.78	0.150	0.005	\$21.41	-0.138	-0.005	-\$19.63
Decrease	6530014490112	SENSOR TYMPANIC ADULT 20S	3.00	EA	12.00	EA	0.150	0.075	\$0.97	0.600	0.300	\$3.87	-0.450	-0.225	-\$2.90
Increase	6508012464202	SKIN CLEANSER MEDICATED 4 FL oz PLASTIC BT 60	12.00	BT	6.00	BT	0.027	0.001	\$0.20	0.013	0.001	\$0.10	0.013	0.001	\$0.10

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Increase	6510007219808	SPONGE SURG COTTON GAUZE 4x4" STERILE 1200S	131.55	EN	120.00	EN	1.754	0.241	\$0.01	1.600	0.220	\$0.01	0.154	0.021	\$0.00
Decrease	6515013589499	STYLET TRACHEAL TUBE 6mm SIZE ALUMINUM/PLASTI	2.00	EA	4.00	EA	0.001	0.000	\$0.39	0.002	0.000	\$0.79	-0.001	0.000	-\$0.39
Decrease	6515014477139	SUCTION CATHETER KIT SURGICAL 50S	4.00	EA	7.00	EA	0.080	0.056	\$0.05	0.140	0.098	\$0.10	-0.060	-0.042	-\$0.04
Decrease	6515012499758	SUCTION SET TRACHEAL 6 COMPONENTS STERILE 60C	2.00	EA	6.00	EA	0.030	0.003	\$1.02	0.090	0.009	\$3.06	-0.060	-0.006	-\$2.04
Increase	6532004056009	SURGICAL PACK GOWN & TOWEL LRG 28S	12.00	EA	6.00	EA	7.286	0.913	\$1.83	3.643	0.456	\$0.92	3.643	0.456	\$0.92
Same	6515013110360	SUTURE KIT SURGICAL 12 COMPONENTS FOR WOUND	2.00	EA	2.00	EA	0.100	0.050	\$0.93	0.100	0.050	\$0.93	0.000	0.000	\$0.00
Decrease	6515010626928	SUTURE NONABS SURG SZ 4-0 SGL ARMED SILK 30"	2.00	EA	10.00	EA	0.014	0.001	\$0.04	0.072	0.004	\$0.20	-0.058	-0.004	-\$0.16
Decrease	6515009824205	SYRINGE & NEEDLE TUBERCULIN 1ml 25GA 100S	3.00	EA	20.00	EA	0.072	0.008	\$0.00	0.480	0.050	\$0.02	-0.408	-0.043	-\$0.02
Decrease	6515007540412	SYRINGE HYPO GP 10ml CAP LUER SLIP 100S	10.00	EA	46.00	EA	0.580	0.057	\$0.02	2.668	0.262	\$0.09	-2.088	-0.205	-\$0.07
Decrease	6515007540406	SYRINGE HYPODERMIC GP 5-6 ml CAP SGL SCALE LU	6.00	EA	10.00	EA	0.285	0.028	\$0.02	0.475	0.046	\$0.03	-0.190	-0.018	-\$0.01
Decrease	6515011643061	SYRINGE IRRIGATING 60cc CAP CATHETER TIP HOLL	1.00	EA	4.00	EA	0.001	0.000	\$0.00	0.005	0.001	\$0.02	-0.004	-0.001	-\$0.01
Decrease	6510009268882	TAPE ADHESIVE SURG WOVEN 1INx12YD 12S	4.00	RO	11.00	RO	0.470	0.017	\$0.22	1.293	0.046	\$0.61	-0.823	-0.029	-\$0.39
Same	6510009268883	TAPE ADHESIVE SURG WOVEN 2INx10YD 6S	4.00	RO	4.00	RO	0.853	0.043	\$0.92	0.853	0.043	\$0.92	0.000	0.000	\$0.00
Increase	6550014199475	TEST PACK SODIUM K IONIZED CALCIUM PH PARTIAL	27.00	EA	25.00	EA	1.080	0.011	\$10.67	1.000	0.010	\$9.88	0.080	0.001	\$0.79
Same	6550011738914	TEST STRIPS & COLOR CHART GLUCOSE IN BLOOD PL	1.00	CO	1.00	CO	0.010	0.001	\$0.50	0.010	0.001	\$0.50	0.000	0.000	\$0.00
Decrease	6530011536423	TOWEL PACK SURG 3 LAYERS INNER LAYER IMPERVIO	2.00	EA	14.00	EA	0.520	0.036	\$0.09	3.640	0.252	\$0.63	-3.120	-0.216	-\$0.54

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

Red=Decrease Green=New Item Blue= Increase Black=Same

Status	NSN	Nomenclature	Revised Qty	Revised UM	Current Qty	Current UM	Revised WGT	Revised Cube	Revised Cost	Current WGT	Current Cube	Current Cost	Wgt Diff	Cube diff	Cost Diff
Decrease	6515011885316	TUBE DRAINAGE SURG PENROSE 1x18" 200S	3.00	EA	4.00	EA	0.052	0.000	\$0.01	0.069	0.000	\$0.01	-0.017	0.000	\$0.00
Decrease	6515007637366	TUBE DRAINAGE SURGICAL C18 THORACIC 32FR STR	2.00	EA	7.00	EA	0.308	0.019	\$0.52	1.078	0.067	\$1.82	-0.770	-0.048	-\$1.30
Same	6515011787873	TUBE ENDO ORAL/NASAL DISP PLAS MURPHY CUFF 6.	2.00	EA	2.00	EA	0.190	0.040	\$1.29	0.190	0.040	\$1.29	0.000	0.000	\$0.00
Same	6515001050720	TUBE ENDOTRACHEAL MURPHY 6.0mm OD 10S	2.00	EA	2.00	EA	0.200	0.010	\$0.42	0.200	0.010	\$0.42	0.000	0.000	\$0.00
Same	6515001050744	TUBE ENDOTRACHEAL MURPHY 7.0mm OD 10S	2.00	EA	2.00	EA	0.200	0.010	\$0.32	0.200	0.010	\$0.32	0.000	0.000	\$0.00
Same	6515001050759	TUBE ENDOTRACHEAL MURPHY 8.0mm OD 10S	2.00	EA	2.00	EA	0.200	0.010	\$0.41	0.200	0.010	\$0.41	0.000	0.000	\$0.00
Increase	6515014657169	TUBE RESPIRATORY GAS OMNI-FLEX DESIGN FLEX PA	6.00	EA	4.00	EA	0.066	0.002	\$0.30	0.044	0.001	\$0.20	0.022	0.001	\$0.10
Decrease	6515013556439	TUBE STOMACH SZ 5.3mm 48" LG 16FR SALEM W/KEI	2.00	EA	4.00	EA	0.080	0.060	\$0.23	0.160	0.120	\$0.47	-0.080	-0.060	-\$0.23
Decrease	6515013549055	TUBE SUCT SURG SALEM D7 SUMP DRAIN 18FR Anti	2.00	EA	4.00	EA	0.040	0.030	\$0.14	0.080	0.060	\$0.28	-0.040	-0.030	-\$0.14
Decrease	6515012334365	TUBE TRACHEAL MURPHY AND NASAL AND ORAL E12 7	1.00	EA	2.00	EA	0.130	0.040	\$0.44	0.260	0.080	\$0.87	-0.130	-0.040	-\$0.44
Increase	6515015028791	TUBING OXYGEN 84" LG STER PLAS 50S	12.00	EA	4.00	EA	1.200	0.600	\$0.27	0.400	0.200	\$0.09	0.800	0.400	\$0.18
Increase	6515005628308	TUBING OXYGEN FORCE-FIT 72" PLASTIC 50S	12.00	EA	6.00	EA	1.080	0.216	\$0.11	0.540	0.108	\$0.05	0.540	0.108	\$0.05
Decrease	6515011011948	TUBING SURG FUNNEL TAPER 1200"LG NONCONDUCTIV	45.05	FT	100.00	FT	1.802	0.234	\$0.05	4.000	0.520	\$0.10	-2.198	-0.286	-\$0.05
Decrease	6515009269150	VALVE DRAIN HEIMLICH 4.50" LG 1" DIA 10S	3.00	EA	9.00	EA	0.018	0.007	\$5.70	0.054	0.022	\$17.09	-0.036	-0.014	-\$11.39
Decrease	6515013883857	VALVE POSITIVE END EXPIRATORY PRESS VENTILATO	5.00	EA	10.00	EA	0.150	0.002	\$5.23	0.300	0.004	\$10.45	-0.150	-0.002	-\$5.23
Decrease	6515014704215	VENTILATOR TUBING	5.00	EA	11.00	EA	0.717	0.110	\$1.02	1.577	0.242	\$2.25	-0.860	-0.132	-\$1.23
		CONSUMABLES TOTALS					80.107	22.570	\$2,097.01	101.209	19.809	\$1,940.60	-21.10	2.761	\$156.42

APPENDIX D. CCATT WEIGHT CUBE AND COST COMPARISON

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Decrease	6530011537123	BAG WASTE RECEPTACLE HEAVY DUTY POLYETHYLENE	3.00	EA	14.00	EA	0.264	0.024	\$0.00	1.232	0.112	\$0.01	-0.968	-0.088	-\$0.01
Decrease	6515015185955	BATTERY LEAD ACID XL SMRT RDY U/W DEFIBRILLAT	1.00	EA	2.00	EA	4.000	0.250	\$180.00	8.000	0.500	\$360.00	-4.000	-0.250	-\$180.00
Decrease	6135009857846	BATTERY NONRECHARGEABLE 1.5V CELL C 12S	1.00	EA	4.00	EA	0.308	0.003	\$0.62	1.233	0.013	\$2.48	-0.925	-0.010	-\$1.86
Increase	6135014217168	BATTERY NONRECHARGEABLE USED IN HAND-HELD BLO	5.00	EA	4.00	EA	0.521	0.006	\$2.43	0.417	0.005	\$1.94	0.104	0.001	\$0.49
Same	6515NCM041119	BLOOD AND FLUID CLEAN-UP KIT	2.00	EA	2.00	EA	0.000	0.000	\$15.02	0.000	0.000	\$15.02	0.000	0.000	\$0.00
Same	6515014764501	BULB KIT REPLACE 5 XENON BULBS 1-BULB WRENCH	1.00	EA	1.00	EA	0.130	0.280	\$37.00	0.130	0.280	\$37.00	0.000	0.000	\$0.00
Increase	6150014983924	CABLE ASSEM REUSABLE U/W THERMISTOR PROBE	8.00	EA	3.00	EA	3.040	2.000	\$304.00	1.140	0.750	\$114.00	1.900	1.250	\$190.00
Increase	6530014512958	CONTAINER SHARPS STERILIZATION & DISPOSAL	2.00	EA	1.00	EA	0.083	0.017	\$0.03	0.042	0.008	\$0.02	0.042	0.008	\$0.02
Same	6515013682874	DETECTOR END-TIDAL CARBON DIOXIDE	2.00	EA	2.00	EA	0.083	0.033	\$3.66	0.083	0.033	\$3.66	0.000	0.000	\$0.00
Same	6530012278451	DISPOSAL CONTAINER NEEDLE/BLADE PLAS FOLDING	2.00	EA	2.00	EA	0.073	0.000	\$0.03	0.073	0.000	\$0.03	0.000	0.000	\$0.00
		TOTAL DURABLES					8.503	2.614	\$542.79	12.350	1.702	\$534.16	-3.847	0.912	\$8.63

REPORT DOCUMENTATION PAGE

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5. AUTHORS Ralph Nix, Martin Hill, Kathleen Onofrio, Paula Konoske, Mike Galarneau		
6. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Health Research Center P.O. Box 85122 San Diego, CA 92186-5122		
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12 DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT (maximum 200 words)

The Air Force Medical Support Agency, Surgeon General Support Logistics Office requested that the Naval Health Research Center (NHRC) conduct a proof of concept study to assess the validity and feasibility of using a medical modeling tool developed by NHRC in U.S. Air Force Allowance Standard (AS) development and management. The Air Force Critical Care Air Transport Team (CCATT) Unit Type Code AS was selected for this study with the goal of developing an inventory validation process using the databases in the NHRC Modeling and Simulation laboratory.

The primary objective of this study was to provide the Air Force with the ability to validate the clinical requirements of the CCATT assemblage by using the NHRC Estimating Supplies Program to establish a viable audit trail linking clinical requirements with supply items.

15. SUBJECT TERMS

Air Force Critical Care Air Transport Team (CCATT), Authorized Medical Allowance List (AMAL), establishing clinical requirements

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
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